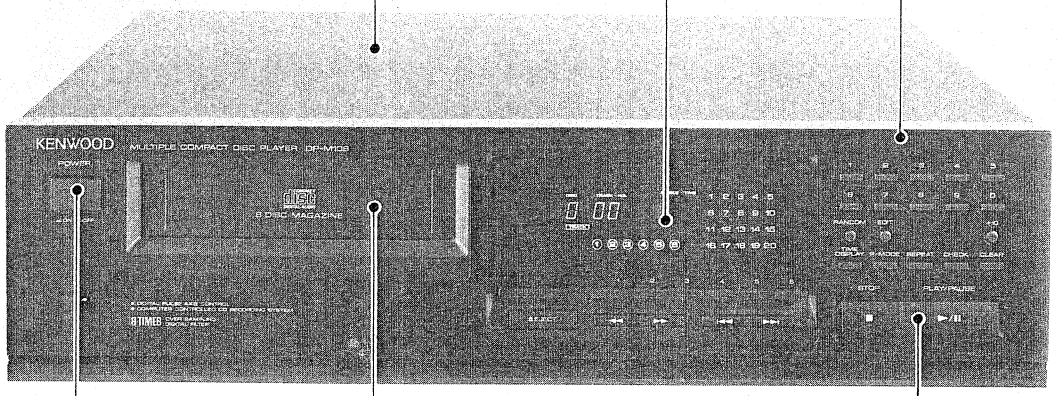
COMPACT DISC PLAYER

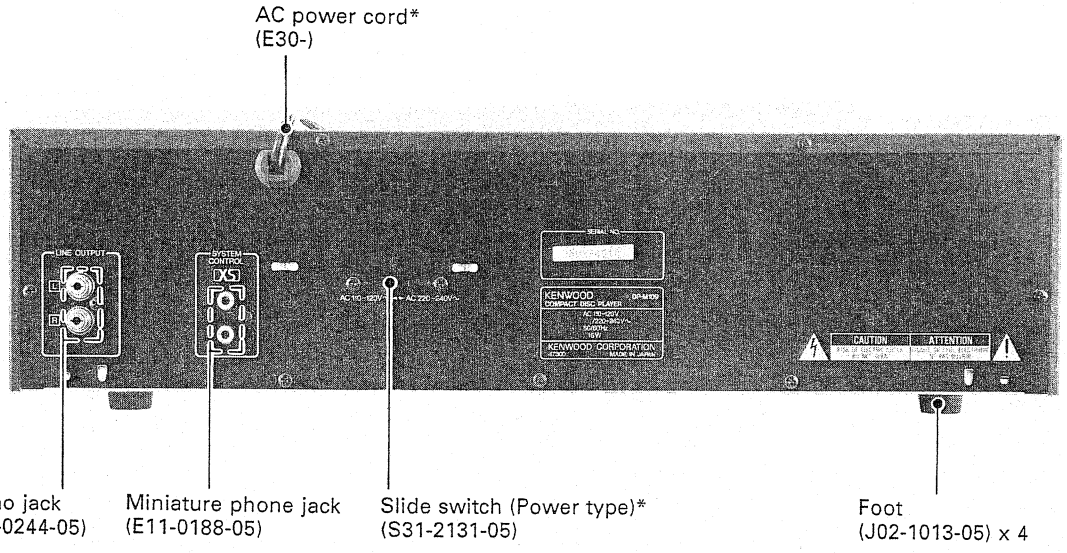
DP-M109/M5520/M6620

SERVICE MANUAL

KENWOOD

B51-4098-00 (O) 3453





In complicance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

DANGER : Laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.

Photo is DP-M109.

*** Refer to parts list on page 46.**
Mechanism description is written by additional issue, (B51-4098-10).

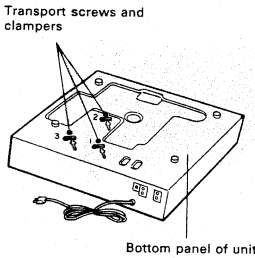
CONTENTS

Contents

Caution

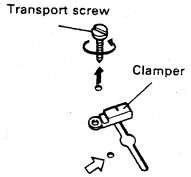
■ Transport screws and clampers

- Be sure to release and remove the transport screws and the clampers.
- When the unit is to be transported again, re-place the transport clampers to their original positions by following the order from 1, 2 and 3 as shown in the illustration.
- Be sure to remove the magazine or compact disc beforehand.



Before using the unit

① **Remove the screws.**



② **Move the clamper.**

③ **Secure the clamper with the screws.**

In case of re-transport when moving or requesting servicing.

① **Remove the transport screw.**

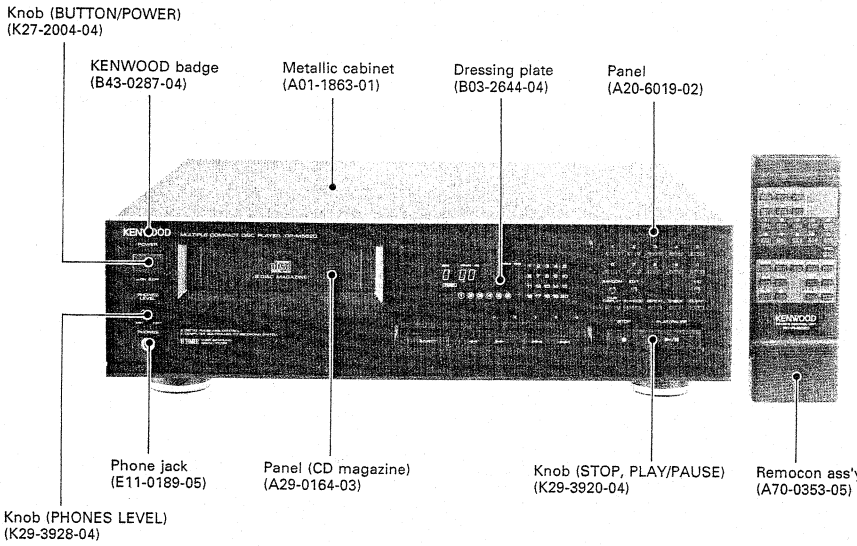
② **Move the clampers back until they stops.**

③ **Secure the clamper with the screws.**

3 models are written in this manual.
Before using it, please check model's name.
Control PC board ass'y (X32-) parts list (page 46 ~) is written the parts for all of 3 models.
Refer to comparison table in schematic diagram.

	CONTROL UNIT	MECHANISM
DP-M109	X32-1590-12 (P)	D40-0916-05
	X32-1592-93 (Y)	D40-0916-05
	X32-1590-72 (X)	D40-0916-05
DP-M5520	X32-1590-11 (K,P)	D40-0916-05
	X32-1590-22 (M)	D40-0916-05
	X32-1590-92 (Y)	D40-0916-05
	X32-1592-71 (T,E)	D40-0916-05
DP-M6620 (Plus one tray)	X32-1590-10 (K,P)	D40-0917-05
	X32-1590-21 (M)	D40-0917-05
	X32-1592-91 (Y)	D40-0917-05
	X32-1590-71 (X)	D40-0917-05

EXTERNAL VIEW



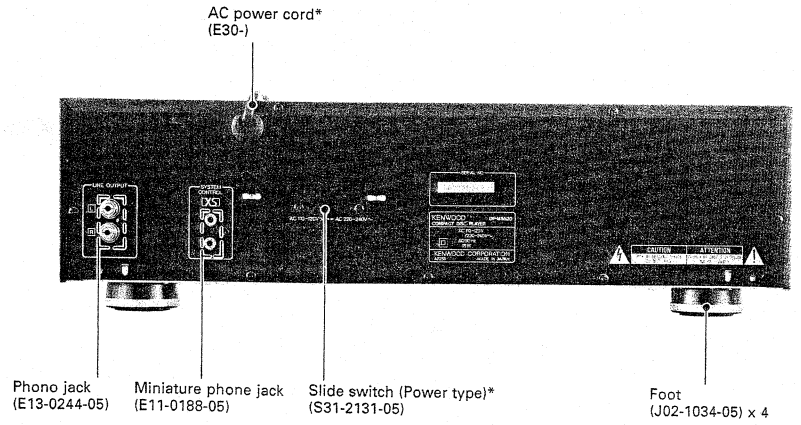
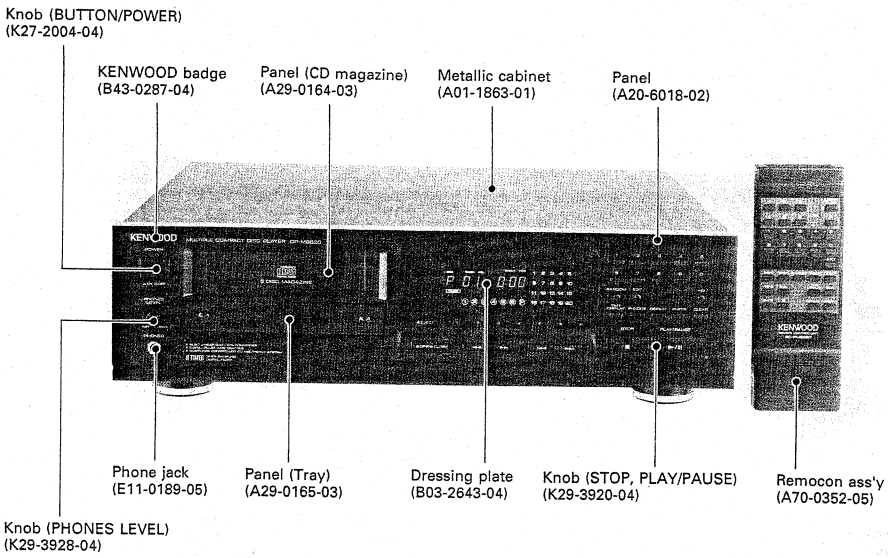


Photo is DP-M5520.

*** Refer to parts list on page 45.**

EXTERNAL VIEW



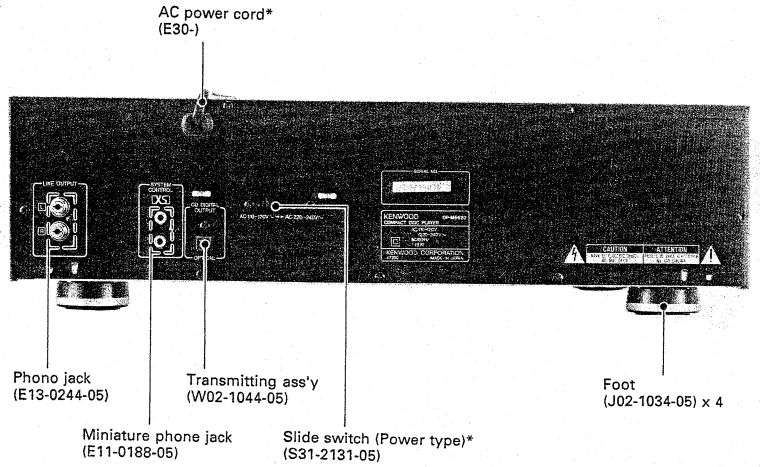


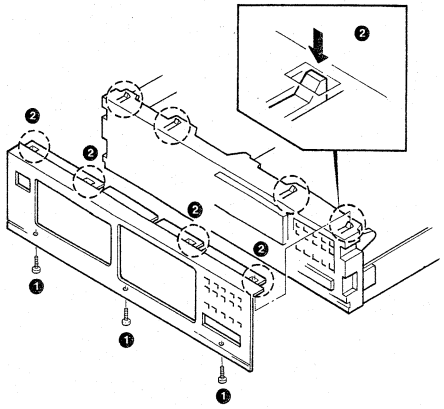
Photo is DP-M6620.

*** Refer to parts list on page 44.**

DISASSEMBLY FOR REPAIR

1. Removing Front Panel

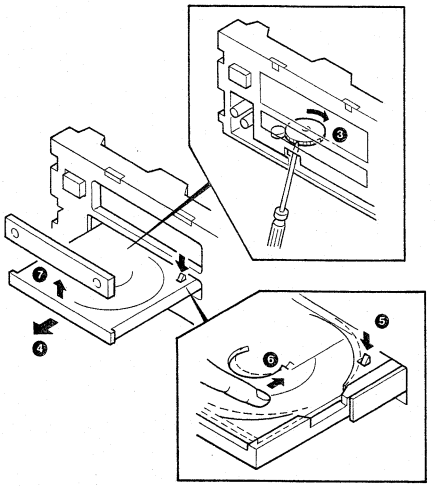
1. Remove 3 screws (❶).
2. Undo 4 catches and remove the front panel (❷).



2. Removing Tray Panel (Single tray : DP-M6620)

1. Remove front panel.
2. Turn the loading gear (❸) while insert screw driver hole located on sub panel under the single tray. *
3. Slide tray out by hand (❹).
4. Remove disc support with unlocking stopper (❺). Disc support slides backwards (❻).
5. Remove single tray panel (❼).

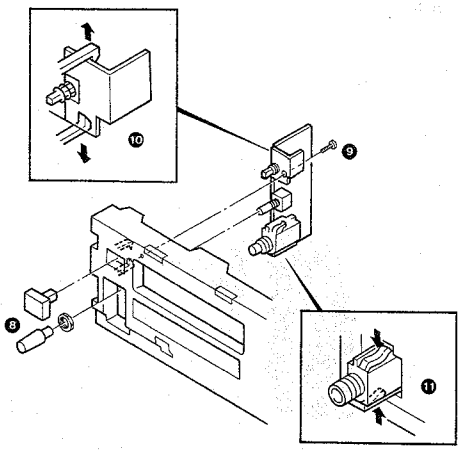
* : This is available for not coming out the single tray.



DISASSEMBLY FOR REPAIR

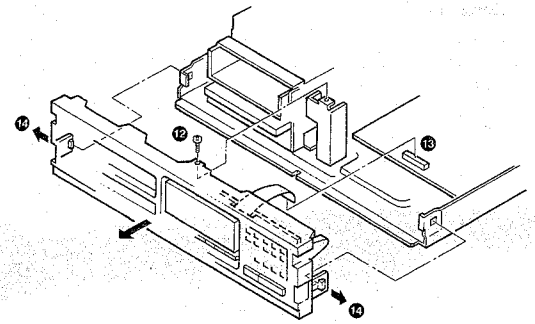
3. Removing Phone Jack (DP-M6620/M5520)

1. Remove 2 knobs and volume nut (❽).
2. Remove screw from back side (❾).
3. Undo 2 catches (❿).
4. Undo hook of phone jack (⓫).



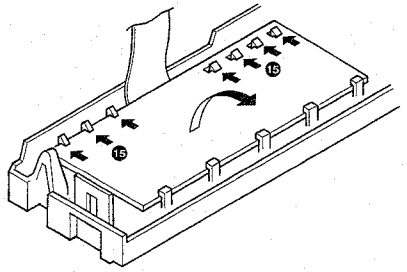
4. Removing Front Panel ass'y

1. Remove screw (⓬).
2. Remove flexible cable (⓭).
3. Undo 2 catches (⓮).



5. Removing Display PCB

1. Remove 7 catches (⓯).

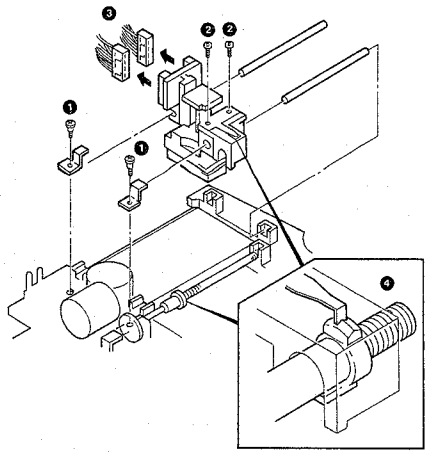


DISASSEMBLY FOR MECHANISM

1. Removing the Pickup

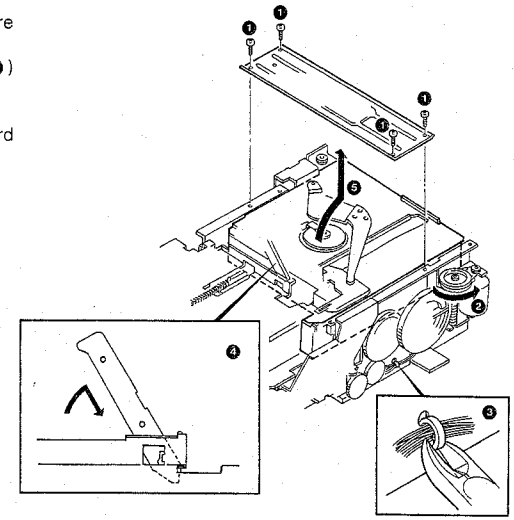
1. Remove the mechanism ass'y and turn upside down.
2. Remove the 2 screws (❶) fixing pickup rods and do them.
3. Remove the pickup mounting hardware (Exploded view No. 101) (❷) and 2 connectors (❸).

Note : If assemble pickup, set the pickup rods so that pickup mounting hardware is in gear with feed gear ass'y (❹).



2. Removing the Lifter Unit Assembly

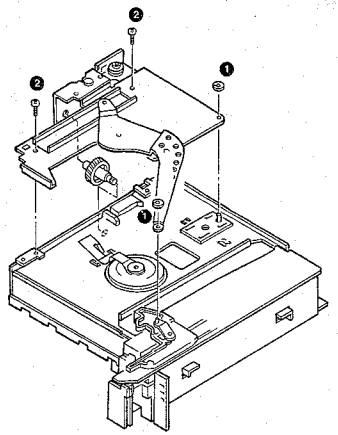
1. Remove 4 screws and remove reinforced hardware (❶).
2. Turn the vertical motor's (VM) pulley to arrow (❷) and lifter unit moves at the top position.
3. Cut wire band (❸).
4. Turn the tray stopper (Ref. No. 44) to rightward about 60° (❹).
5. Remove lifter unit upwards (❺).



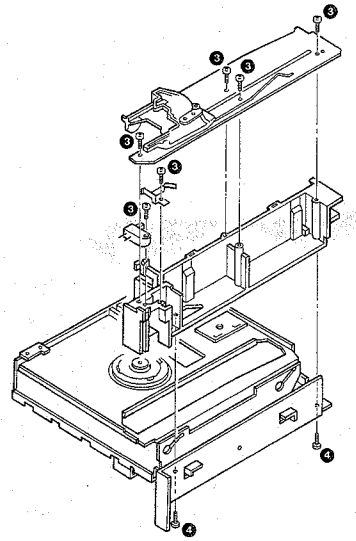
DISASSEMBLY FOR MECHANISM

3. Removing the Disc Motor (DM)

1. Remove 2 washers (❶).
2. Remove 2 screws (❷) and loading motor (LM) mounting hardware.

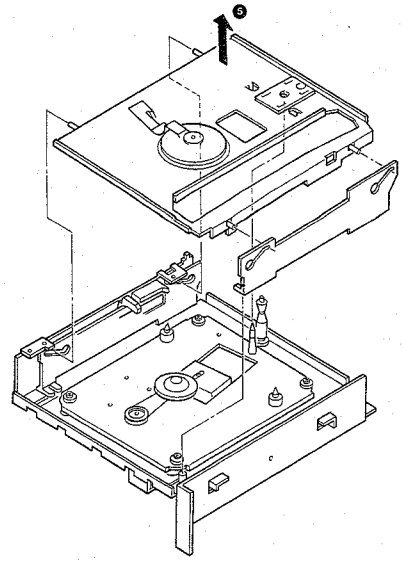


3. Remove 5 screws fixing the side base and 2 screws (❸).
4. Remove 2 screws (❹).

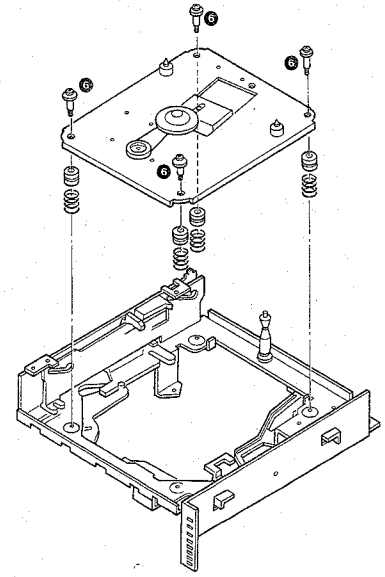


DISASSEMBLY FOR MECHANISM

5. Remove the clamper ass'y (Ref. No. 106) (❺) upwards.

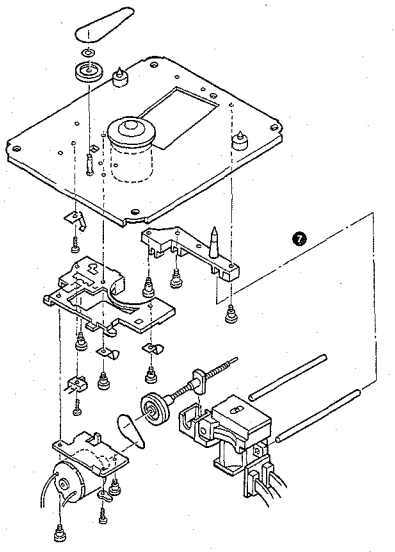


6. Remove 4 screws (❻) and lift up mechanism ass'y.



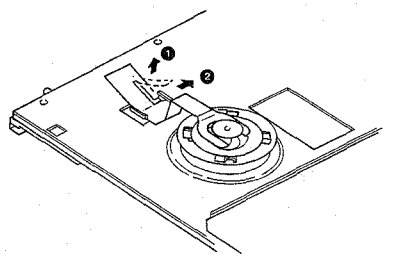
DISASSEMBLY FOR MECHANISM

7. Remove assembly parts and replace the disc motor ass'y with new one (❼).

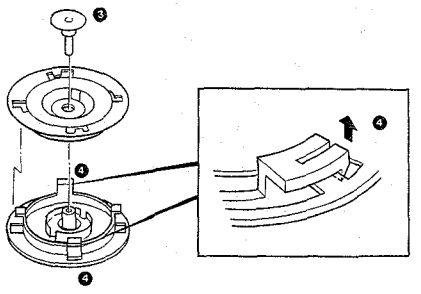


4. Removing the Disc Clamper

1. Lift the clamper plate-spring (Ref. No. 115) up (❶) and slide it (❷).
2. Remove the clamper (Ref. No. 114).



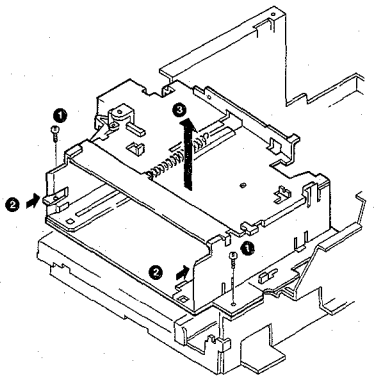
3. Pull the pin upwards (❸).
4. Undo 2 catches of clamper (❹).



DISASSEMBLY FOR MECHANISM

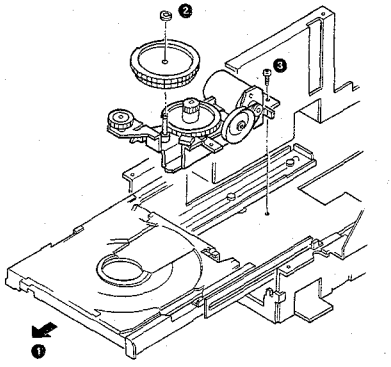
5. Removing the Magazine Holder

1. Remove 2 screws (❶) and side the magazine holder backwards (❷).
2. Lift the magazine holder upwards (❸).



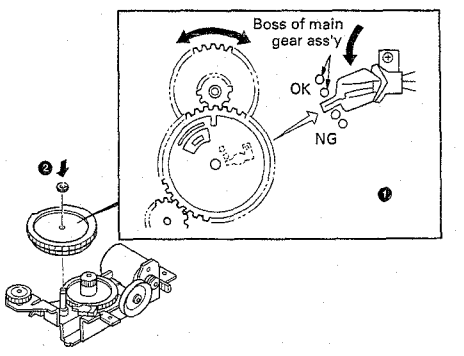
6. Removing the Single Tray Mechanism Ass'y (DP-M6620)

1. Pull the single tray forwards (❶).
2. Remove the washer and main gear (❷).
3. Remove the screw and single tray mechanism ass'y (P1 mechanism) (❸).



7. Mounting the P1 Mechanism Ass'y (DP-M6620)

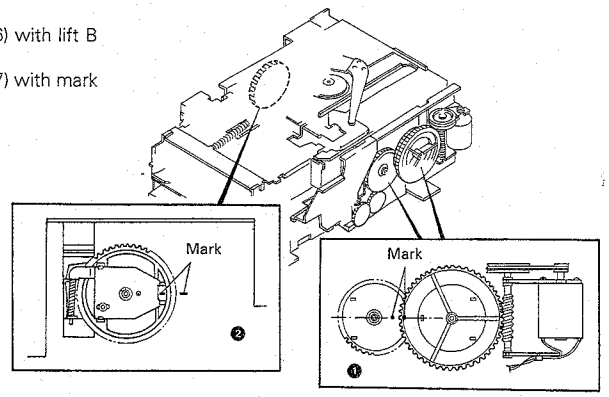
1. Open the single tray (❶).
2. Mount the main gear and set the washer (❷).



DISASSEMBLY FOR MECHANISM

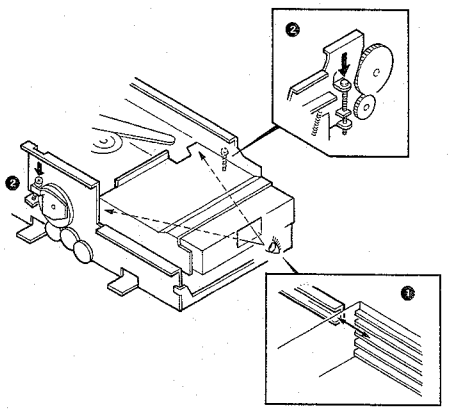
8. Mounting the VM gear

1. Meet the boss of lift A gear (Ref. No. 6) with lift B gear (Ref. No. 9) (❶).
2. Meet the boss of lift C gear (Ref. No. 17) with mark on the chassis (❷).



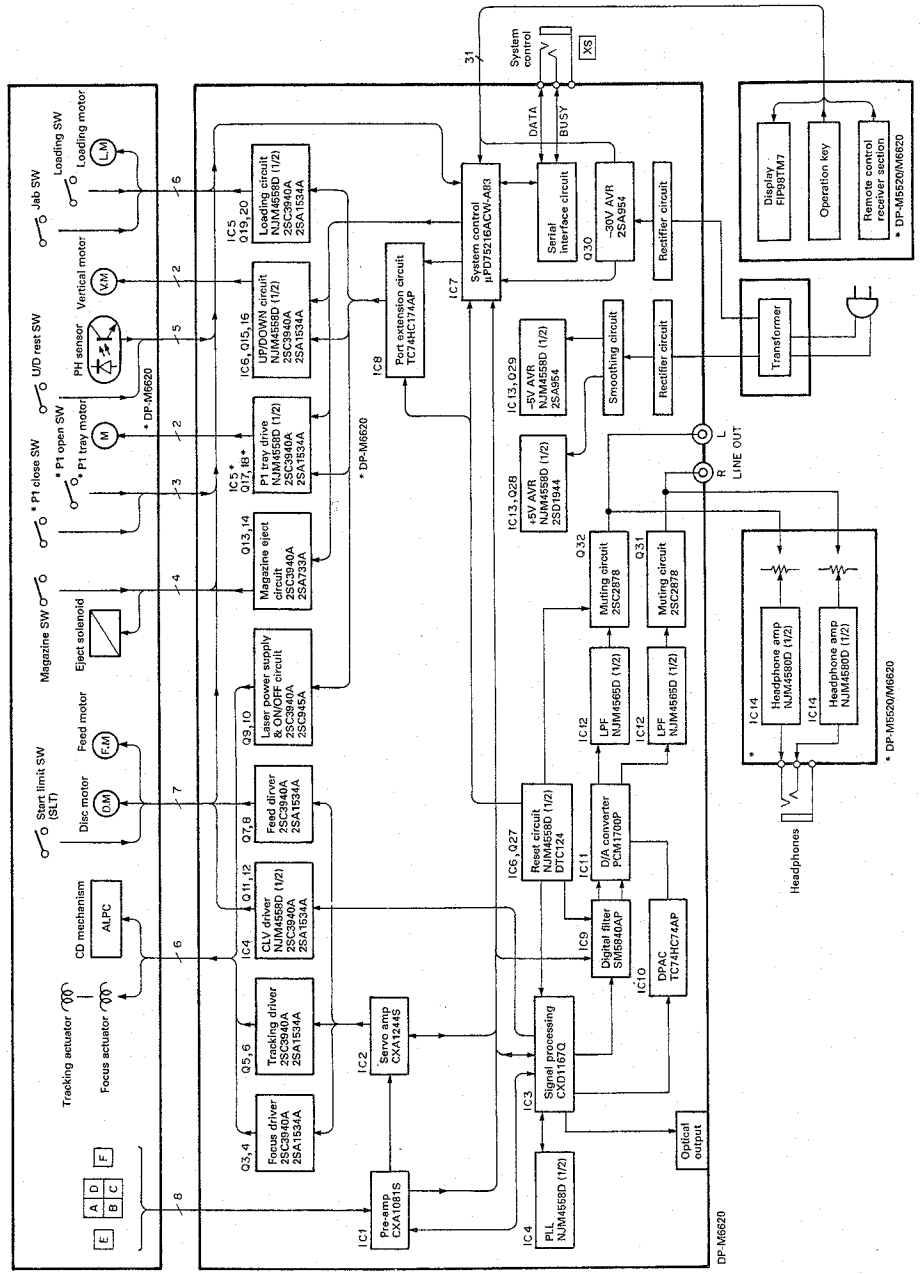
9. Adjusting Lifter Ass'y Position

1. Insert magazine pack without disc tray (❶).
2. Press No. 3 disc selector knob (mode in disc No. 3 select).
3. Set power off.
4. Set the 3rd slit of magazine pack to the slit of lifter ass'y with adjusting screws (❷) from seeing the window of magazine pack.



DP-MT09/5520/6620

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

1. Description of Components

1-1. CONTROL UNIT (X32-1590-10)

Ref. No.	Parts No.	Use/Function	Operation/Condition/Compatibility
IC1	CXA1081S	RF amplifier	Focusing signal generator, tracking error signal generator, RF signal generator and phase comparator, and auto-symmetry corrector circuit.
IC2	CXA1244S	Servo signal processor	Generation of focusing servo, tracking servo and feed servo pulses for servo control.
IC3	CXD1167Q	Digital signal processor	All digital signal processing operations, including the EFM data demodulator, error corrector, interpolation circuit, PLL circuit, CLV servo circuit, digital output circuitry, and include RAM.
IC4	NJM4558D	Operation amplifier	(1/2) PLL compensation circuit (LPF + Amplifier). (2/2) CLV compensation circuit (LPF + Level shifter).
IC5	NJM4558D	Operation amplifier	(1/2) Loading drive amplifier. (2/2) Single tray control amplifier (DP-M6620).
IC6	NJM4558D	Operation amplifier	(1/2) Power ON/OFF reset pulse generation. (2/2) Lifter unit UP/DOWN control amplifier.
IC7	µPD75216ACW-A83	Microprocessor	Display control, key input processing and servo IC control.
IC8	TC74HC174AP	D-FF	Generation of signal for controlling load, single tray and lifter unit UP/DOWN.
IC9	SM5840BP	Digital filter	8-times over-sampling digital filter and includes noise shaper, de-emphasis circuitry.
IC10	TC74HC174AP	D-FF	Digital pulse AXIS control (DPAC) ; refer to DP-8010 service manual. WDCK signal to send to DAC IC is synchronized with x'tal clock signal.
IC11	PCM1700P	D/A converter	18 bit, includes 2 channels.
IC12	NJM4565D	Operation amplifier	(1/2) R-ch LPF. (2/2) L-ch LPF.
IC13	NJM4558D	Operation amplifier	Power supply (±5V).
IC14	NJM4580D	Operation amplifier	(1/2) L-ch headphone amplifier. (DP-M5520/M6620) (2/2) R-ch headphone amplifier. (DP-M5520/M6620)
Q1	2SC945(A) (Q,P)		If defect signal generates, not supply bias to FE circuit.
Q2	2SA733(A) (Q,P)		Muting at STOP mode.
Q3	2SC3940A		Focus actuator driver.
Q4	2SA1534A		Focus actuator driver.
Q5	2SC3940A		Tracking actuator driver.
Q6	2SA1534A		Tracking actuator driver.
Q7	2SC3840A		Feed motor driver.
Q8	2SA1534A		Feed motor driver.
Q9	2SC3940A		Power supply for laser diode.
Q10	2SC945(A) (Q,P)		Control for laser diode (ON/OFF).
Q11	2SC3940A		Disc motor driver.
Q12	2SA1534A		Disc motor driver.
Q13	2SC3940A		Solenoid driver.
Q14	2SA733(A) (Q,P)		ON/OFF control for solenoid .
Q15	2SC3940A		Vertical motor driver.
Q16	2SA1534A		Vertical motor driver.
Q17	2SC3940A		Single tray loading motor driver.
Q18	2SA1534A		Single tray loading motor driver.
Q19	2SC3940A		Loading motor driver.
Q20	2SA1534A		Loading motor driver.
Q21~26	2SC945(A) (Q,P)		FL display driver.
Q27	DTC124ES		Inverter of RESET signal.
Q28	2SD1944		Power supply (+5V).
Q29	2SA954(L,M)		Power supply (–5V).
Q30	2SA954(L,M)		Power supply (–30V).
Q31	2SC2878(B)		L-ch mute of line out.
Q32	2SC2878(B)		R-ch mute of line out.

DP-M109/5520/6620

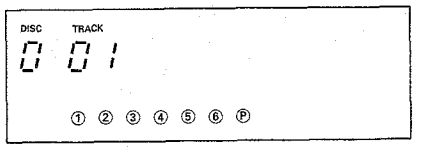
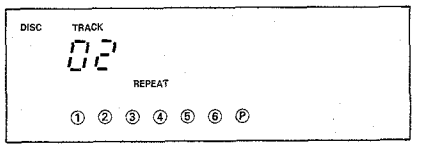
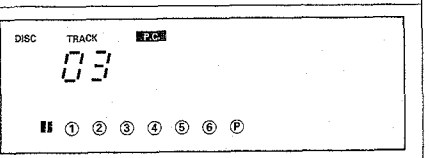
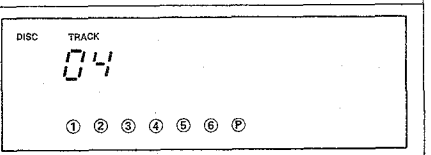
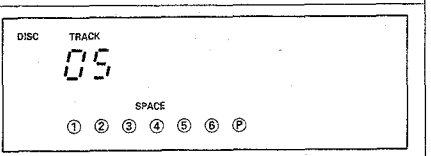
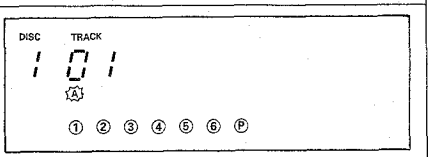
CIRCUIT DESCRIPTION

2. Test Mode

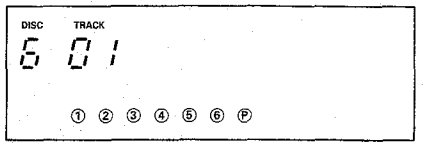
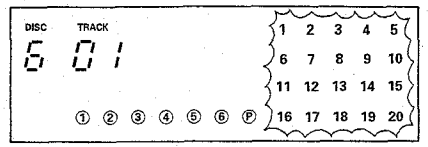
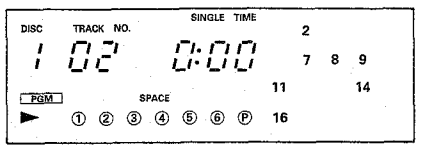
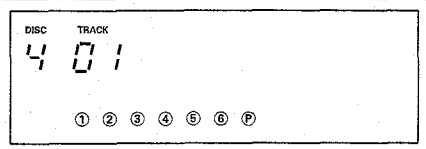
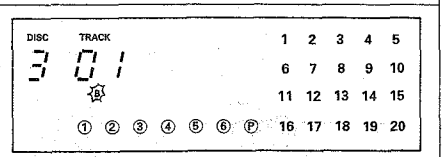
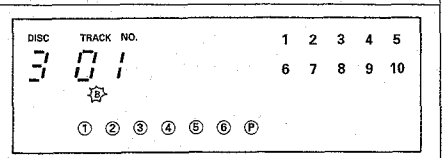
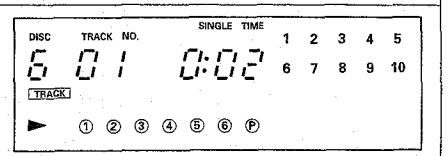
2-1. Setting the test mode

This microprocessor can be put to the test mode by just short-circuiting the test pins (#3 and #4) even in the set mode (normal condition).

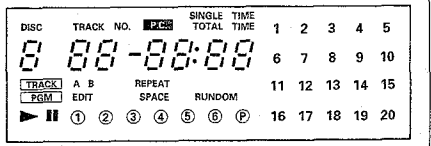
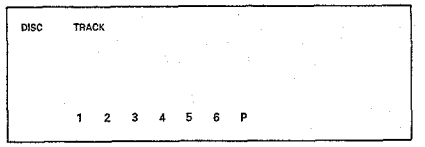
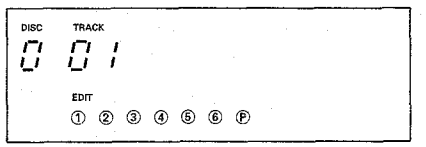
2-2. Keys and functions effective in test mode

No.	Input key	Function	Display
1	STOP	(1) Focusing servo ..... OFF (2) Tracking servo ..... OFF (3) Feed servo ..... OFF	
2	+10	(1) Laser ..... ON (in STOP mode only)	
3	CHECK	(1) Focusing servo ..... ON (2) Tracking servo ..... OFF (3) Feed servo ..... OFF	
4	CLEAR	(1) Focusing servo ..... ON (2) Tracking servo ..... ON (3) Feed servo ..... OFF	
5	PLAY	(1) Focusing servo ..... ON (2) Tracking servo ..... ON (3) Feed servo ..... ON	
6	DISC 1 (Disc A mode)	Load No. 1 disc to No. 6 in order. Stop function after loading No. 6 disc. If it takes 25 minutes or more after pressing the key and loading No. 1 disc to No. 6, calendar mode in display goes on and off.	

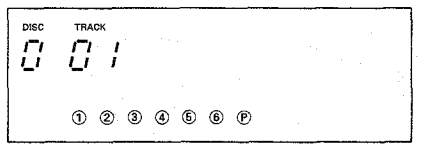
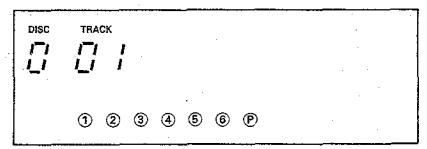
CIRCUIT DESCRIPTION

No.	Input key	Function	Display
6-a		In A mode, display in stop mode after loading No. 6 disc. If disc loaded, check clear and play test mode is available.	
6-b		In A mode, operation time is 25 minutes or more. If STOP key is pressed, display stops to go on and off.	
7	P. MODE	Track No. 2, 7, 8, 9, 11, 14 and 16 are programmed.	
8	DISC 3 ~ 6	Load the decided No. disc which is pressed by the disc key. ex. Disc No. 4 key is pressed.	
9	DISC 2 (Disc B mode)	Read the TOC (table of contents) of disc No. 3 to No. 6 in order. TEST mode is cancelled after reading the TOC of No. 6 disc, and then playback the 1st track.	
9-a		In B mode, in case of reading the No. 3's TOC.	
9-b		In B mode, in case of normal playback. Change mode to NORMAL after reading No. 6's TOC.	

CIRCUIT DESCRIPTION

No.	Input key	Function	Display
10	UP ⏭	Turns all FL display lamps ON.	
11	DOWN ⏮	Turns all FL display lamps OFF. "DISC" and "1 ~ 6" are not off because circuit is static operation.	
12	EDIT	Turns "EDIT" letters ON.	
13	Numeric key (1 ~ 0)	Jumps tracks as shown below.	

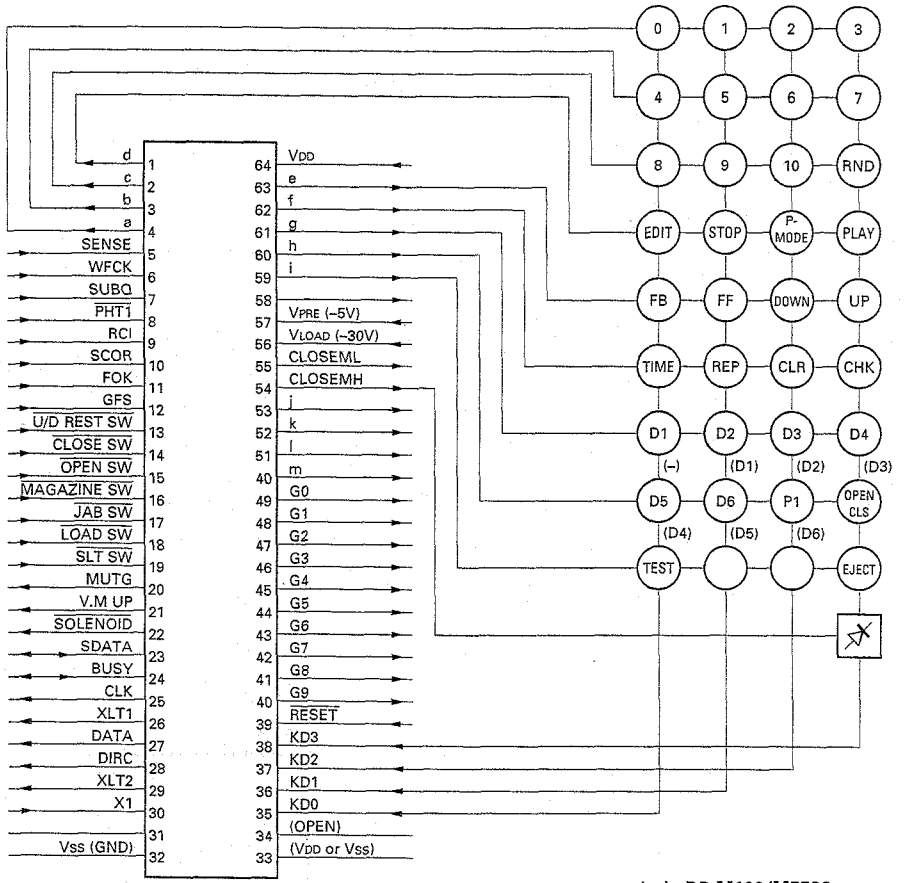
Key	1	2	3	4	5
Number of tracks	1	4	16	32	1000
Direction	Outer				
Key	6	7	8	9	0
Number of tracks	1	4	16	32	1000
Direction	Inner				

No.	Input key	Function	Display
14	FF ⏩	In the STOP mode, moves the pickup slightly toward the outer position of disc.	
15	FB ⏪	In the STOP mode, moves the pickup slightly toward the inner position of disc.	

CIRCUIT DESCRIPTION

3. Microprocessor : μPD75216ACW-A83 (IC7)

3-1. Terminal connection diagram



( ) : DP-M109/M5520

CIRCUIT DESCRIPTION

3-2. Explanation of terminals

Pin No.	Pin Name	I/O	Function Name	Function
1~4	S3~S0	O	d~a	FL display tube segment control pins.
5	P00/INT4	I	SENSE	SENSE input from signal processing IC or servo IC.
6	P01/SCK	I	WFCK	Q data read clock input.
7	P02/SO	I	SUBQ	Q data input pin.
8	P03/SI	I	PHT1	Disc search pin (photo-interrupter).
9	P10/INT0	I	RCI	Remote control signal input pin.
10	P11/INT1	I	SCOR	Sub-code frame sync detection signal input pin.
11	P12/INT2	I	FOK	RF amplifier FOK signal input pin. FOK "1" : With reflection light.
12	P13/T10	I	GFS	Frame sync status signal input pin. GFS "1" : In frame sync.
13	P20	I	U/D REST	UP/DOWN REST position (HOME position) input pin.
14	P21	I	CLOSE	Tray draw-in detection switch input. When tray is drawn in : "L" (DP-M6620)
15	P22	I	OPEN	Tray draw-out detection switch input. When tray is drawn out : "L" (DP-M6620)
16	P23	I	MAGAZINE	Magazine detection pin.
17	P30	I	JAB	JAB operation detection pin (unloading).
18	P31	I	LOAD	Load detection pin.
19	P32	I	SLT	Pickup's rest position detection pin.
20	P33	O	MUTG	Signal processing IC MUTG pin control signal output pin. Muting at "H".
21	P60	O	V.M UP	Vertical motor control pin (up signal output).
22	P61	O	SOLENOID	Magazine-out solenoid control pin. (DP-M6620)
23	P62	I/O	SDATA	Serial data I/O pin.
24	P63	I/O	BUSY	Serial data BUSY I/O pin.
25	P40	O	CLK	Clock pin control signal output pin.
26	P41	O	XLT1	Latch pin control signal output pin.
27	P42	O	DATA	Data pin control signal output pin.
28	P43	O	DIRC	Servo IC DIRC pin control signal output pin.
29	PPO	O	XLT2	Digital filter control pin (for latch).
30	X1	I	X1	System clock input.
31	–	–	–	–
32	Vss	–	Vss	GND.
33	XT1	–	–	Not used.
34	XT2	–	–	Not used.
35~38	P50~P53	I	KD0~KD3	Key matrix key return signal input pins.
39	RESET	I	RESET	Reset input pin. Active "L"
40~49	T0~T9	O	10G~1G	FL display tube digit control pins.
50~53	S15~S12	O	m, l ,k, j	FL display tube segments control pins.
54	S11	O	CLOSEMH	Close-motor high-speed control pin.
55	S10	O	CLOSEML	Close-motor low-speed control pin.
56	VLOAD	I	VLOAD	FL display-driver power supply (–30V).
57	VPRE	I	VPRE	FL display-predriver power supply.
58	S9	O	–	Not used.
59~63	S8~S4	O	e~f	FL display tube segments control pins.
64	VDD	–	VDD	Power supply (+5V).

CIRCUIT DESCRIPTION

4. RF amplifier : CXA1081S (IC1)

General

The CXA1081S is an IC developed for use in Compact Disc players. It incorporates a 3-spot optical pickup RF output amplifier, a focusing error amplifier, a tracking error amplifier, and other signal processing circuitry, such as focus OK, mirror, defect, and EFM comparator circuits, as well as a laser diode APC (Automatic Power Control) circuit.

Features

- Operates on a signal +5 V power supply, as well as on a ±5 V dual-voltage power supply.
- Low power consumption (100 mW with ±5 V, 50 mW with +5 V).
- An APC circuit which accepts either a P-sub or N-sub laser diode.
- A minimum of external parts required.
- A disc defect detector circuit for improved playability.

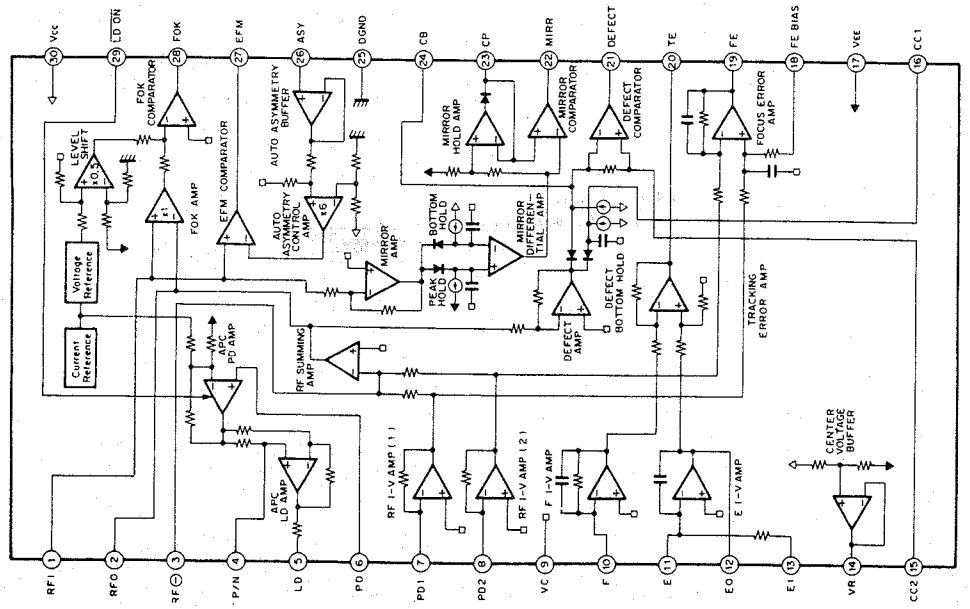
Structure

Bipolar silicon monolithic IC

Functions

- RF amplifier
- Focus OK detector circuit
- Mirror detector circuit
- Tracking error amplifier
- Defect detector circuit
- APC circuit
- EFM comparator
- Auto asymmetry control amplifier

4-1. Pin connections and block diagram



4-2. Pin functions (VCC = 2.5V, VEE = DGND = –2.5V, VC = GND)

Terminal No.	Terminal name	I/O	DC voltage (V)	Function
1	RFI	I	0	Input pin for the C-coupled signal output from the RF summing amplifier.
2	RFO	O	V_{RFO}	RF summing amplifier output pin. Used as the check point for the eye pattern.
3	RF⊖	I	0	RF summing amplifier feedback input pin.
4	P/N	I	0 (VC)	P-sub/N-sub select pin for the LD (Laser Diode). (DC voltage: in N-sub mode)
5	LD	O	–1.8	*APC LD amplifier output pin. (DC voltage: PD open in N-sub mode)
6	PD	I	0	*APC LD amplifier input pin. (DC voltage: open)
7	PD1	I	0	RF I-V amplifier (1) inverted input pin. Current input by connecting to the photodiode A+C terminal.
8	PD2	I	0	RF I-V amplifier (2) inverted input pin. Current input by connecting to the photodiode B+D terminal.
9	VC	—	0	Connected to GND when using a positive (+)/negative (–) dual-voltage power supply. Connected to VR (pin 14) when using a single-voltage power supply.
10	F	I	0	F I-V amplifier inverted input pin. Current input by connecting to the photodiode F terminal.
11	E	I	0	E I-V amplifier inverted input pin. Current input by connecting to the photodiode E terminal.
12	EO	O	0	E I-V amplifier output pin.
13	EI	I	0	E I-V amplifier feedback input pin. For E I-V amplifier gain adjustment.
14	VR	O	V_{CVO}	DC voltage output pin of $(V_{CC}+V_{EE})/2$.
15	CC2	I	1.0	Input pin for the C-coupled signal output from the defect bottom hold.
16	CC1	O	1.2	Defect bottom hold output pin.
17	VEE	—	–2.5	Connected to the negative power supply when using a positive (+)/negative (–) dual-voltage power supply. Connected to GND when using a single-voltage power supply.
18	FE BIAS	I	0	Bias pin on the focus error amplifier non-inverted side. For CMR adjustment of the focus error amplifier.
19	FE	O	V_{FEO}	Focus error amplifier output pin.
20	TE	O	V_{TEO}	Tracking error amplifier output pin.
21	DEFECT	O	V_{DFCTL}	Defect comparator output pin. (DC voltage: connected to a 10 k-ohm load).
22	MIRR	O	V_{MIRL}	Mirror comparator output pin. (DC voltage: connected to a 10 k-ohm load).
23	CP	I	–1.3	Mirror hold capacitor output pin. Mirror comparator non-inverted input.
24	CB	I	0	Defect bottom hold capacitor connect pin.
25	DGND	—	–2.5	Connected to GND when using a positive (+)/negative (–) dual-voltage power supply. Connected to GND (V_{EE}) when using a single-voltage power supply.
26	ASY	I	—	Auto asymmetry control input pin.
27	EFM	O	V_{EFMH}	EFM comparator output pin. (DC voltage: connected to a 10 k-ohm load).
28	FOK	O	V_{FOKL}	FOK comparator output pin. (DC voltage: connected to a 10 k-ohm load).
29	LD ON	I	–2.5 (DGND)	LD ON/OFF select pin. (DC voltage: when LD ON)
30	Vcc	—	2.5	Positive power supply.

*APC: Automatic Power Control

CIRCUIT DESCRIPTION

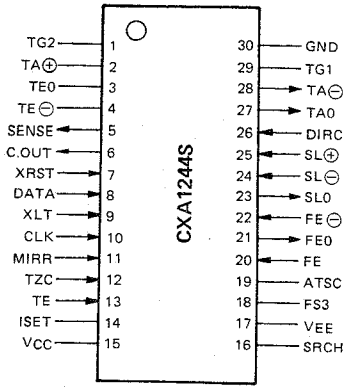
5. Servo Signal Processor : CXA1244S (IC2)

CXA1244S is a bipolar IC developed for servo of compact disc (CD) players, and it provides the following functions.

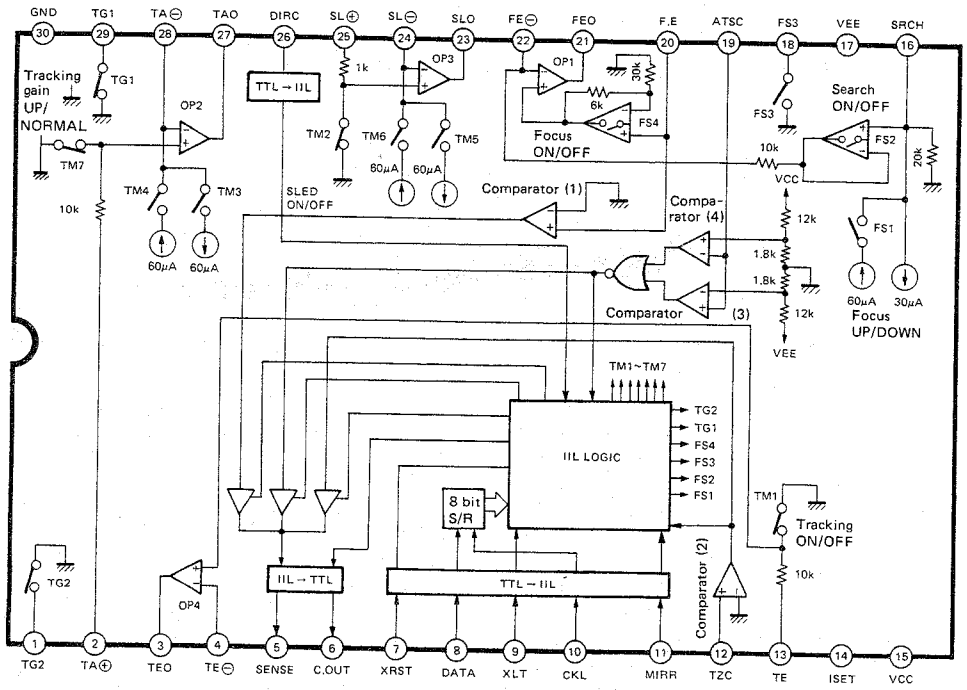
- Focus control (search ON/OFF, gain control)
- Tracking control (servo ON/OFF, single track jump, multiple track jump, gain control, phase compensation control, brake circuit)
- Sled control (servo ON/OFF, fast forward, fast reverse)

Servo function of each of focus, tracking and sled as well as random access operation are realized through control by microcomputer. Furthermore, the serial data bus can be shared with CXD1167Q.

5-1. Pin connections



5-2. Block diagram



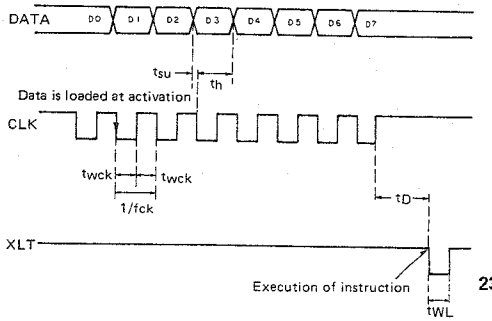
5-3. Pin functions

Terminal No.	Terminal name	I/O	Functions
1	TG2		Tracking amplifier gain switching terminal. GND level.
2	TA ⊕		Non-inverted input of operational amplifier 2.
3	TE0		Output of operational amplifier 4.
4	TE ⊖	O	Inverted input of operational amplifier 4.
5	SENSE	O	Output of SSP internal status that corresponds to ADDRESS of CPU → SSP. (Changes in accordance with ADDRESS content of internal serial register.) See Note 1.
6	C. OUT	O	Signal output for counting number of tracks at the time of high speed access.
7	XRST	I	All internal registers are cleared when CPU → SSP "L". Connected with CPU RESET. See Note 2.
8	DATA	I	Serial data transmission of CPU → SSP. Input is made from LSB. D0~D7.
9	XLT	I	Latch of serial data of CPU → SSP. (The contents of internal serial register are transmitted to each address decoded latch.) Transmission at "L". Change to "H" occurs immediately after execution because no edge trigger is produced.
10	CLK	I	CPU → SSP serial data transmission block. Data is read at falling. "H" level before and after transmission.
11	MIRR	I	Mirror signal input from RF amplifier.
12	TZC	I	Tracking error signal is input with C couple. The time constant is determined by one single track jump, but it is usually around 2kHz.
13	TE	I	Tracking error signal input.
14	ISET		Setting of current level for determining focus search voltage, tracking jump voltage and thread feed voltage.
15	Vcc		Power supply terminal. Normally −5V.
16	SRCH		The condenser for determining the time constant of charge/discharge waveform for focus search is connected.
17	VEE		Power supply terminal. Normally −5V.
18	FS3		Focus amplifier gain switching terminal. GND level.
19	ATSC		Such information that a mechanical shock was applied to the player is input. Simply, a trakcing error is input through BPF.
20	FE	I	Input of focus error signal.
21	FE0	O	Output of operational amplifier 1.
22	FE ⊖	I	Inverted input of operational amplifier 1.
23	SL0	O	Output of operational output 3.
24	SL ⊖	I	Inverted input of operational amplifier 3.
25	SL ⊕	I	Non-inverted input of operational amplifier 3.
26	DIRC	I	Used at the time of one track jump. Normally "H". The direction of the track jump pulse is reversed with "L". Setting is made in the normal tracking mode by changing to "H". "L" for a fixed length of time with detection of activation, deactivation of TZC.
27	TA0	O	Output of operational amplifier 2.
28	TA ⊖	O	Inverted input of operational amplifier 2.
29	TG1		Tracking amplifier gain switching terminal. GND level.
30	GND		GND terminal of IC.

Note 1 : SENSE terminal output

Serial data upper 4 bits	ADDRESS content	SENSE terminal output	Explanation
0 0 0 0	FOCUS CONTROL	FZC	"H" when focus zero cross. Focus erro voltage is 0V or higher. Used at the time of FOCUS PULL operation.
0 0 0 1	TRACKING CONTROL	AS	"H" when the ATSC input level exceeds the wind comparator level (VTH = ±Vcc x 13%). But this is not used in this equipment.
0 0 1 0	TRACKING MODE	TZC	Judgement output of positive or negative of tracking zero cross, tracking error. When used at the time of single track jump, DIRC is reduced to "L" on detection of TZC ↑ in FWD JUMP or on detection of TZC ↓ in REV JUMP.

Note 2 : Digital unit timing chart



6. Digital Signal Processor : CXD1167Q (IC3)

General

The CXD1167Q is a digital signal processing LSI for a Compact Disc player, and has the following functions.

1. Bit clock reproduction by an EFM-PLL circuit
2. EFM data demodulation
3. Frame sync signal detection, protection and insertion
4. Powerful error detection and correction
5. Interpolation with an average value, or by holding the previous value
6. Demodulation of a sub code signal, error detection of a sub code Q
7. Spindle motor CLV servo
8. 8-bit tracking counter
9. CPU interface with a serial bus
10. Sub code Q register
11. Digital filter
12. Digital audio interface output

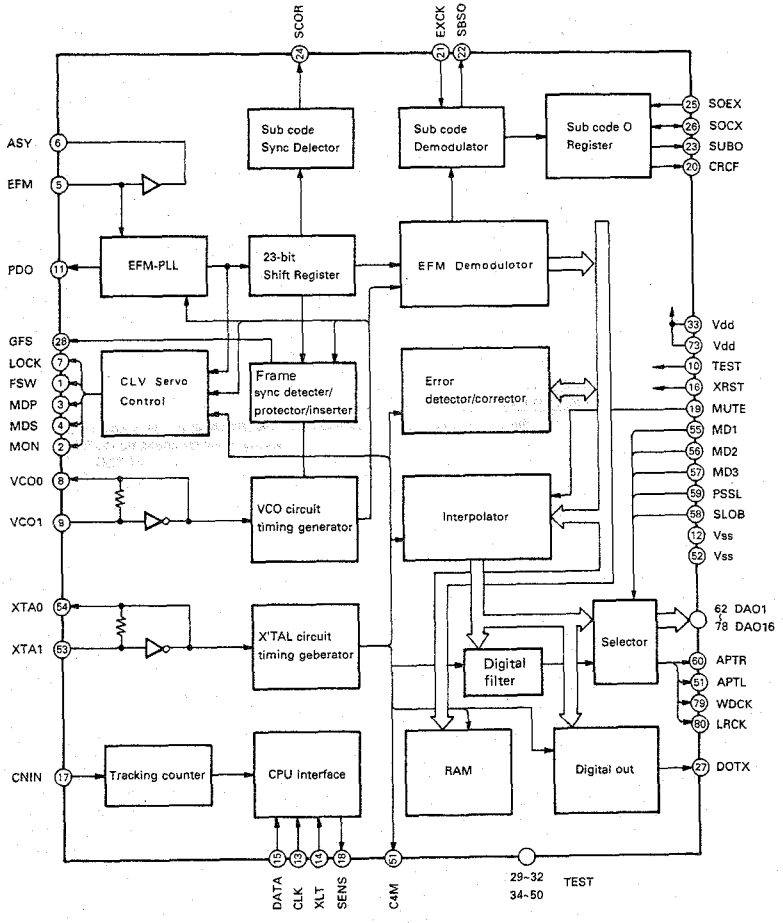
Features

- All digital signals used in playback can be processed using only a single chip.
- An aperture-correction digital filter is built in.

Structure

CMOS IC

6-1. Pin connections and block diagram



6-2. Pin functions

Terminal No.	Terminal name	I/O	Function
1	FSW	O	Time constant switching output of output filter of spindle motor
2	MON	O	ON/OFF control output of spindle motor
3	MDP	O	Drive output of spindle motor Rough speed control in CLV-S mode and phase control in CLV-P mode
4	MDS	O	Drive output of spindle motor Speed control in CLV-P mode
5	EFM	I	EFM signal input from RF amplifier
6	ASY	O	Output for controlling the slice level of EFM signal
7	LOCK	O	Samples the GFS signal with WFCK/16, and outputs "H" when the level is high When it is "L" for eight times, in arrow, outputs "L"
8	VCOO	O	VCO output f = 8.6436 MHz when locked to EFM signal
9	VCOI	I	VCO input
10	TEST	I	(0 V)
11	PDO	O	Phase comparison output of EFM signal and VCO/2
12	Vss	–	GND (0 V)
13	CLK	I	Serial data transmission clock input from CPU Data is latched at rising edge of a clock
14	XLT	I	Latch input from CPU. Data (serial data from CPU) from the 8 bit shift register is latched in each register
15	DATA	I	Serial data input from CPU
16	XRST	I	System reset input. Reset at "L"
17	CNIN	I	Input of tracking pulse
18	SENS	O	Output of internal status in correspondence to the address
19	MUTG	I	Muting input In the case when ATTM of internal register A is "L" Normal status when MUTG is "L" or soundless state when it is "H"
20	CRCF	O	Output of result of CRC check of sub code Q
21	EXCK	I	Clock input for sub code serial output
22	SBSO	O	Sub code serial output
23	SUBQ	O	Sub code Q output
24	SCOR	O	Sub code sync S0 + S1 output
25	SQCK	I/O	Sub code Q read-off clock
26	SQEX	I	SQCK select input
27	DOTX	O	DIGITAL OUT output
28	GFS	O	Display output of frame sync lock status
29	DB08	I/O	H or L position. Don't open circuit.
30	DB07	I/O	H or L position. Don't open circuit.
31	DB06	I/O	H or L position. Don't open circuit.
32	DB05	I/O	H or L position. Don't open circuit.
33	VDD	–	Power supply (+5 V)
34	DB04	I/O	H or L position. Don't open circuit.
35	DB03	I/O	H or L position. Don't open circuit.
36	DB02	I/O	H or L position. Don't open circuit.
37	DB01	I/O	H or L position. Don't open circuit.
38	RA01	O	H or L position. Don't open circuit.
39	RA02	O	H or L position . Don't open circuit.
40	RA03	O	H or L position. Don't open circuit.
41	RA04	O	H or L position. Don't open circuit.
42	RA05	O	H or L position. Don't open circuit.
43	RA06	O	H or L position Don't open circuit.

CIRCUIT DESCRIPTION

Terminal No.	Terminal name	I/O	Function
44	RA07	O	H or L position. Don't open circuit.)R07
45	RA08	O	H or L position. Don't open circuit.)R08
46	RA09	O	H or L position. Don't open circuit.)R09
47	RA10	O	H or L position. Don't open circuit.)R10
48	RA11	O	H or L position. Don't open circuit.)R11 (MSB)
49	RAWE	O	H or L position. Don't open circuit. RAM. (Active at "L").
50	RACS	O	H or L position. Don't open circuit. AM. (Active at "L")
51	C4M	O	Crystal dividing output. f = 4.2336 MHz.
52	Vss	–	GND (0 V).
53	XTAI	I	Crystal oscillator input. f = 8.4672 MHz or 16.9344 MHz depending on the mode selected
54	XTAO	O	Crystal oscillator output. f = 8.4672 MHz or 16.9344 MHz depending on the mode selected
55	MD1	I	Mode select input 1.
56	MD2	I	Mode select input 2.
57	MD3	I	Mode select input 3.
58	SLOB	I	Audio data output code select input. 2's complement output when "L", offset binary output when "H"
59	PSSL	I	Audio data output mode select input. Serial output when "L", parallel output when "H"
60	APTR	O	Aperture compensation control output. "H" when R-ch.
61	APTL	O	Aperture compensation control output. "H" when L-ch
62	DA01	O	DA01 (parallel audio data LSB) output when PSSL = "H", C1F1 output when PSSL = "L"
63	DA02	O	DA02 output when PSSL = "H", C1F2 output when PSSL = "L"
64	DA03	O	DA03 output when PSSL = "H", C2F1 output when PSSL = "L"
65	DA04	O	DA04 output when PSSL = "H", C2F2 output when PSSL = "L"
66	DA05	O	DA05 output when PSSL = "H", C2FL output when PSSL = "L"
67	DA06	O	DA06 output when PSSL = "H", C2PO output when PSSL = "L"
68	DA07	O	DA07 output when PSSL = "H", RFCK output when PSSL = "L"
69	DA08	O	DA08 output when PSSL = "H", WFCK output when PSSL = "L"
70	DA09	O	DA09 output when PSSL = "H", $\overline{PLCK}$ output when PSSL = "L"
71	DA10	O	DA10 output when PSSL = "H", UGFS output when PSSL = "L".
72	DA11	O	DA11 output when PSSL = "H", GTOP output when PSSL = "L".
73	VDD	–	Power supply (+5 V).
74	DA12	O	DA12 output when PSSL = "H", RAOV output when PSSL = "L".
75	DA13	O	DA13 output when PSSL = "H", C4LR output when PSSL = "L"
76	DA14	O	DA14 output when PSSL = "H", $\overline{C21O}$ output when PSSL = "L"
77	DA15	O	DA15 output when PSSL = "H", C21O output when PSSL = "L"
78	DA16	O	DA16 (parallel audio data MSB) output when PSSL = "H", DATA output when PSSL = "L"
79	WDCK	O	Strobe signal output. 176.4 kHz when DF is ON, 88.2 kHz with CXD1167Q or when DF is OFF
80	LRCK	O	Strobe signal output. 88.2 kHz when DF is ON, 44.1 kHz with CXD1167Q or when DF is OFF.

Notes:

C1F1 : C1F2 : Error correction status monitor output for C1 decode.

C2F1 : C2F2 : Error correction status monitor output for C2 decode.

C2FL : Correction status output. Goes "H" when the currently corrected C2 series data cannot be corrected.

C2PO : C2 pointer signal. Synchronized to the audio data output.

RFCK : Read frame clock output. 7.35 MHz when locked to the crystal line.

WFCK : Write frame clock output. 7.35 MHz when locked to the crystal line.

$\overline{PLCK}$: VCO/2 output. f = 4.3218 MHz when locked to the EFM signal.

UGFS : Non-protected frame sync pattern output.

GTOP : Frame sync protect status display output.

RAOV : ±4 frame jitter absorption RAM overflow and underflow display output.

C4LR : Strobe signal. 352.8 kHz when DF is ON, 176.4 kHz with CXD1167Q or when DF is OFF.

$\overline{C21O}$: C21O invert output.

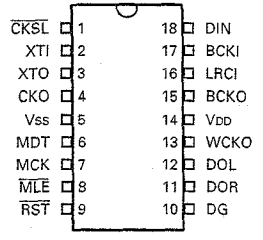
C21O : Bit clock output. 4.2336 MHz when DF is ON, 2.1168 MHz with CXD1167Q or when DF is OFF.

DATA : Audio signal serial data output.

CIRCUIT DESCRIPTION

7. Digital Filter : SM5840BP (IC9)

7-1. Pin connections

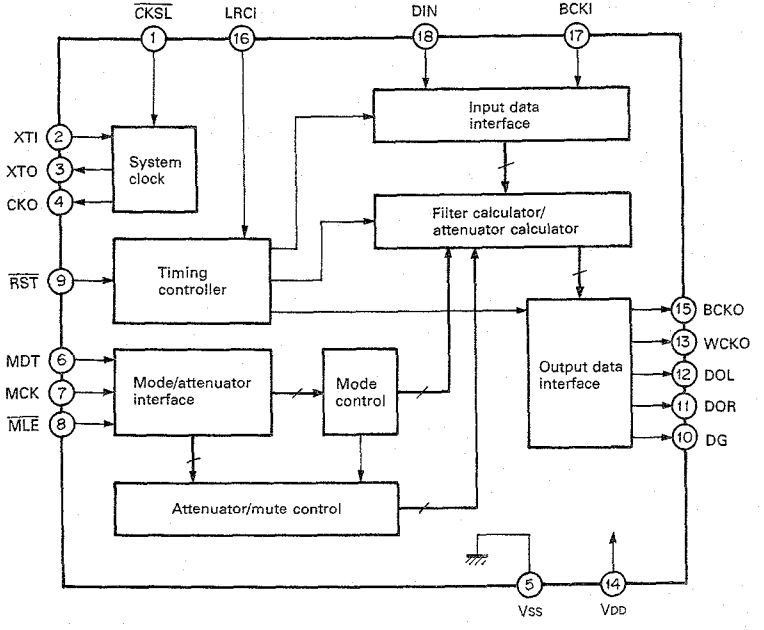


7-2. Pin functions

Pin No.	Pin Name	I/O	Function
1	$\overline{CKSL}$	ip	Clock select. "H" : 384 fs, "L" : 256 fs
2	XTI	I	Oscillation input.
3	XTO	O	Oscillation output.
4	CKO	O	Oscillation output clock.
5	VSS	–	GND.
6	MDT	ip	Mode setter (DATA) — Decide digital attenuator and mode flag register.
7	MCK	ip	Mode setter (CLOCK) — Decide digital attenuator and mode flag register.
8	$\overline{MLE}$	ip	Mode setter (LATCH INENABLE) — Decide digital attenuator and mode flag register.
9	$\overline{RST}$	ip	System reset.
10	DG	O	–
11	DOR	O	Output data (R).
12	DOL	O	Output data (L).
13	WCKO	O	Output word clock.
14	VDD	–	Power supply (+5V).
15	BCKO	O	Output-bit clock.
16	LRCI	ip	Input-data sample rate (fs) clock.
17	BCKI	ip	Input-bit clock.
18	DIN	ip	Input data.

ip = Input pin with pull-up resistor.

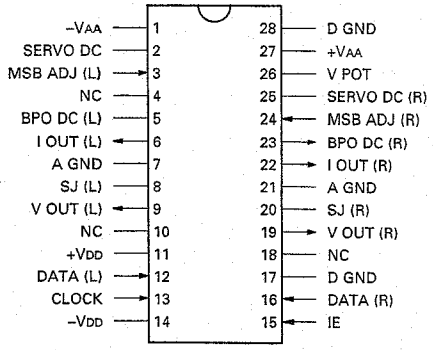
7-3. Block diagram



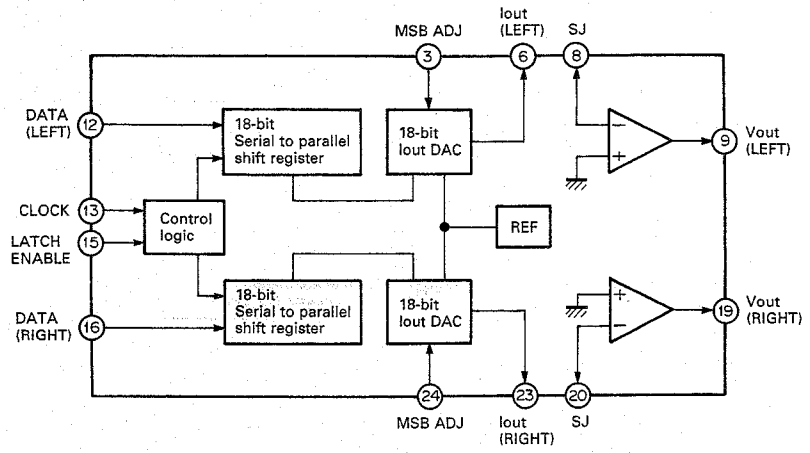
CIRCUIT DESCRIPTION

8. D/A Converter : PCM1700P (IC11)

8-1. Pin connections



8-2. Block diagram

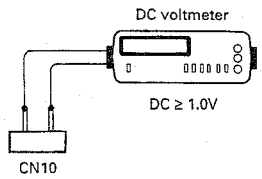


ADJUSTMENT

No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG
1	LASER POWER *	–	Connect a DC voltmeter to CN10 pin 1-2.	Short-circuit pins TEST and turn the power on to enter the test mode. Press the +10 key and confirm that display is "02".	–	DC ≧ 1.0V When the diffraction grating is correctly aligned with the RF level of 1.0Vp-p or more and the TE (servo open) level of 1.5Vp-p or more, the pickup is acceptable.	(a)
2	VCO	–	Connect a frequency counter to PLCK (TP5).	Turn power switch off and set the unit to test mode again. Then confirm that the display is "01"	L1	4.31MHz ± 10kHz	(b)
3	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1: RF (CN11-1) CH2: TE (CN11-6)	Set the test disc to the 3rd position in the magazine pack. Press the 3rd key of the disc selector and load the test disc. Then confirm that the display is "03"	TE BALANCE VR1	Symmetry between upper and lower patterns, or DC=0±0.03V	(c)
4	FOCUS GAIN	Test disc Type 4 Apply signal of 800Hz,100mVrms to CN11 pin 2-3.	Connect a LPF to CN11 pin 2-3 to which connect an oscilloscope or an AC voltmeter.	Press the PLAY key. Confirm that the display is" 05 ".	FOCUS GAIN VR3	Two VTVMs should read the same value. 100mVrms	(e)
5	TRACKING GAIN	Test disc Type 4 Apply signal of 1.0kHz,100mVrms to CN11 pin 5-6.	Connect a LPF to CN11 pin 5-6 to which connect an oscilloscope or an AC voltmeter.	Press the PLAY key. Confirm that the display is" 05 " .	TRACKING GAIN VR4	Two VTVMs should read the same value. 100mVrms	(e)

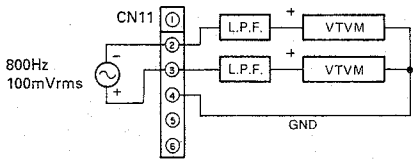
(Note) Type 4 disc: SONY YDS-18 Test Disc or equivalent.
LPF: Around 47kohms+390pF or so.
Step 1~5 are in Test Mode.
* It is impossible to measure the laser power with power meter.
Check the current of LD with DC voltmeter at CN10.

(a) Laser Power

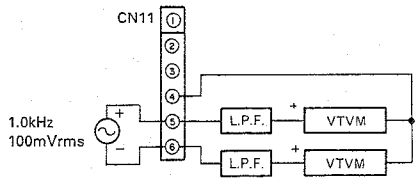


(e) Focus Gain and Tracking Gain

Focus gain
Two VTVMs should read the same value.
0dB (100mVrms)



Tracking gain
Two VTVMs should read the same value.
0dB (100mVrms)



ADJUSTMENT

No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG
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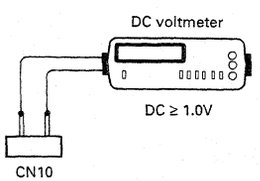
2	VCO	–	Connect a frequency counter to PLCK (TP5).	Turn power switch off and set the unit to test mode again. Then confirm that the display is "01"	L1	4.31MHz ± 10kHz	(b)
3	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1: RF (CN11-1) CH2: TE (CN11-6)	Set the test disc to the 3rd position in the magazine pack. Press the 3rd key of the disc selector and load the test disc. Then confirm that the display is "03"	TE BALANCE VR1	Symmetry between upper and lower patterns, or DC=0±0.03V	(c)
4	FOCUS GAIN	Test disc Type 4 Apply signal of 800Hz,100mVrms to CN11 pin 2-3.	Connect a LPF to CN11 pin 2-3 to which connect an oscilloscope or an AC voltmeter.	Press the PLAY key. Confirm that the display is" 05 ".	FOCUS GAIN VR3	Two VTVMs should read the same value. 100mVrms	(e)
5	TRACKING GAIN	Test disc Type 4 Apply signal of 1.0kHz,100mVrms to CN11 pin 5-6.	Connect a LPF to CN11 pin 5-6 to which connect an oscilloscope or an AC voltmeter.	Press the PLAY key. Confirm that the display is" 05 " .	TRACKING GAIN VR4	Two VTVMs should read the same value. 100mVrms	(e)

(Note) Type 4 disc: SONY YDS-18 Test Disc or equivalent.
LPF: Around 47kohms+390pF or so.
Step 1~5 are in Test Mode.

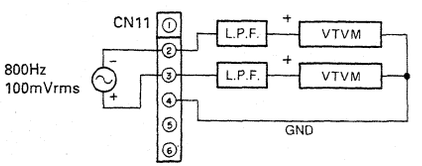
* It is impossible to measure the laser power with power meter.
Check the current of LD with DC voltmeter at CN10.

(a) Laser Power

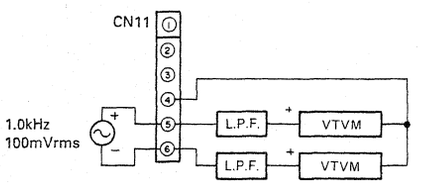


(e) Focus Gain and Tracking Gain

Focus gain
Two VTVMs should read the same value.
0dB (100mVrms)

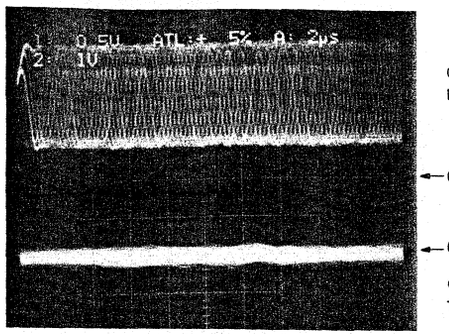


Tracking gain
Two VTVMs should read the same value.
0dB (100mVrms)

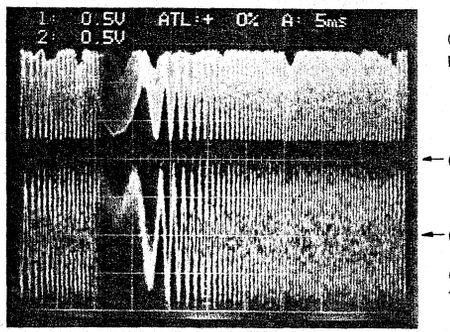


DP-M109/5520/6620

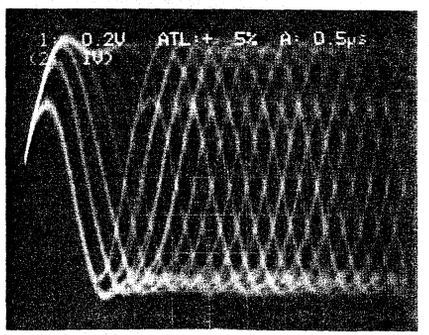
ADJUSTMENT



(a) •RF signal and TE signal in test mode (PLAY).
•If the diffraction grating has been adjusted properly, the influence of triggering is observed on the TE waveform of aporox. 13µs after RF signal, in the form of a projection.

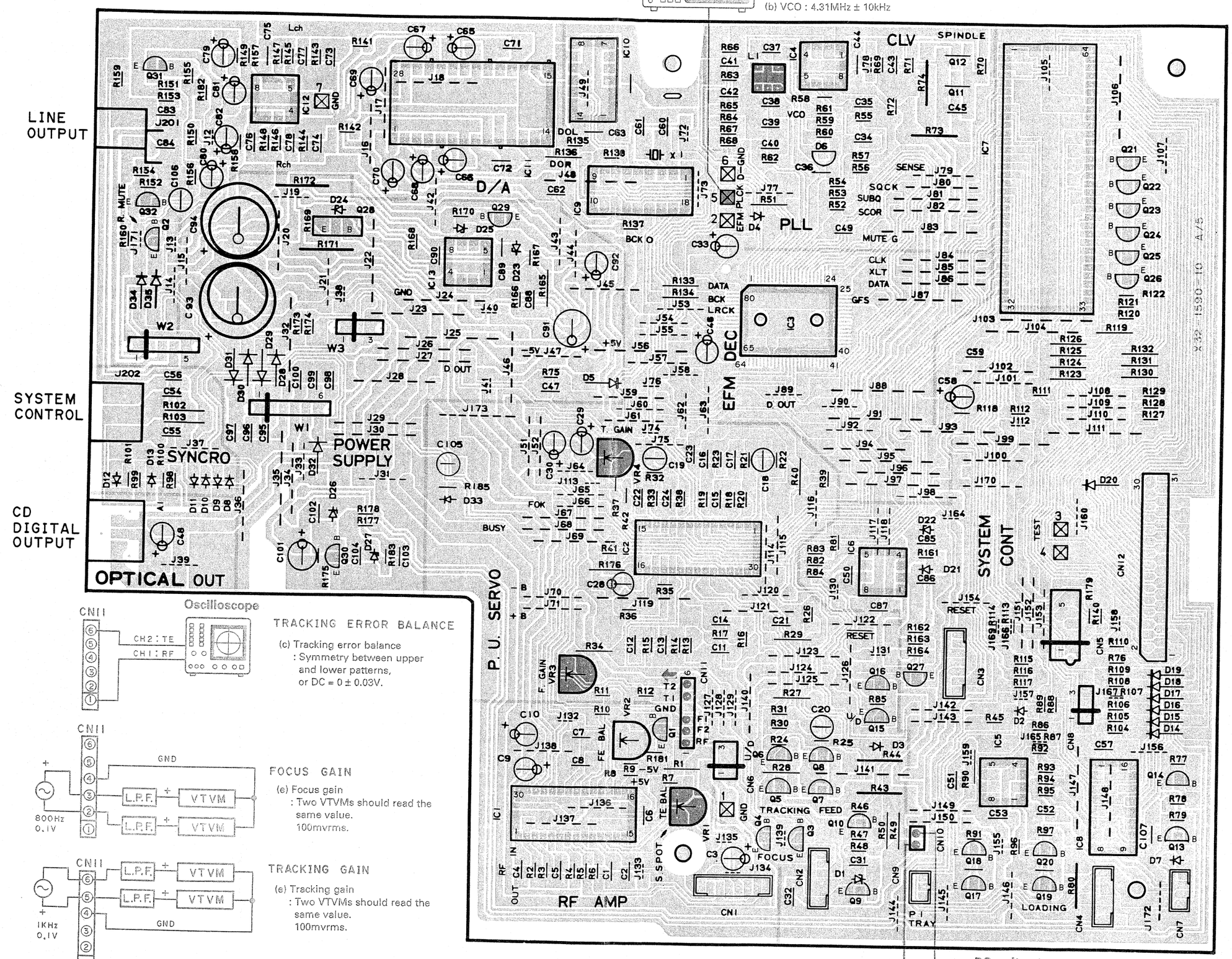


(c) •RF signal and TE signal in test mode (Focusing servo on, CHECK).
•Adjust TE signal so that the waveform is symmetical above and be low 0V. (TE BALANCE, VR1)



(d) •RF signal in test mode (PLAY).
•Preform the focusing offset adjustments so that each of center cross points are focusing into onepoints above and below the center shall also displayed clealy. (FE BALANCE, VR1)

PC BOARD (COMPONENT SIDE VIEW)



TRACKING ERROR BALANCE

(c) Tracking error balance
: Symmetry between upper and lower patterns, or DC = 0 ± 0.03V.

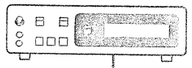
FOCUS GAIN

(e) Focus gain
: Two VTVMs should read the same value.
100mvrms.

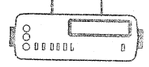
TRACKING GAIN

(e) Tracking gain
: Two VTVMs should read the same value.
100mvrms.

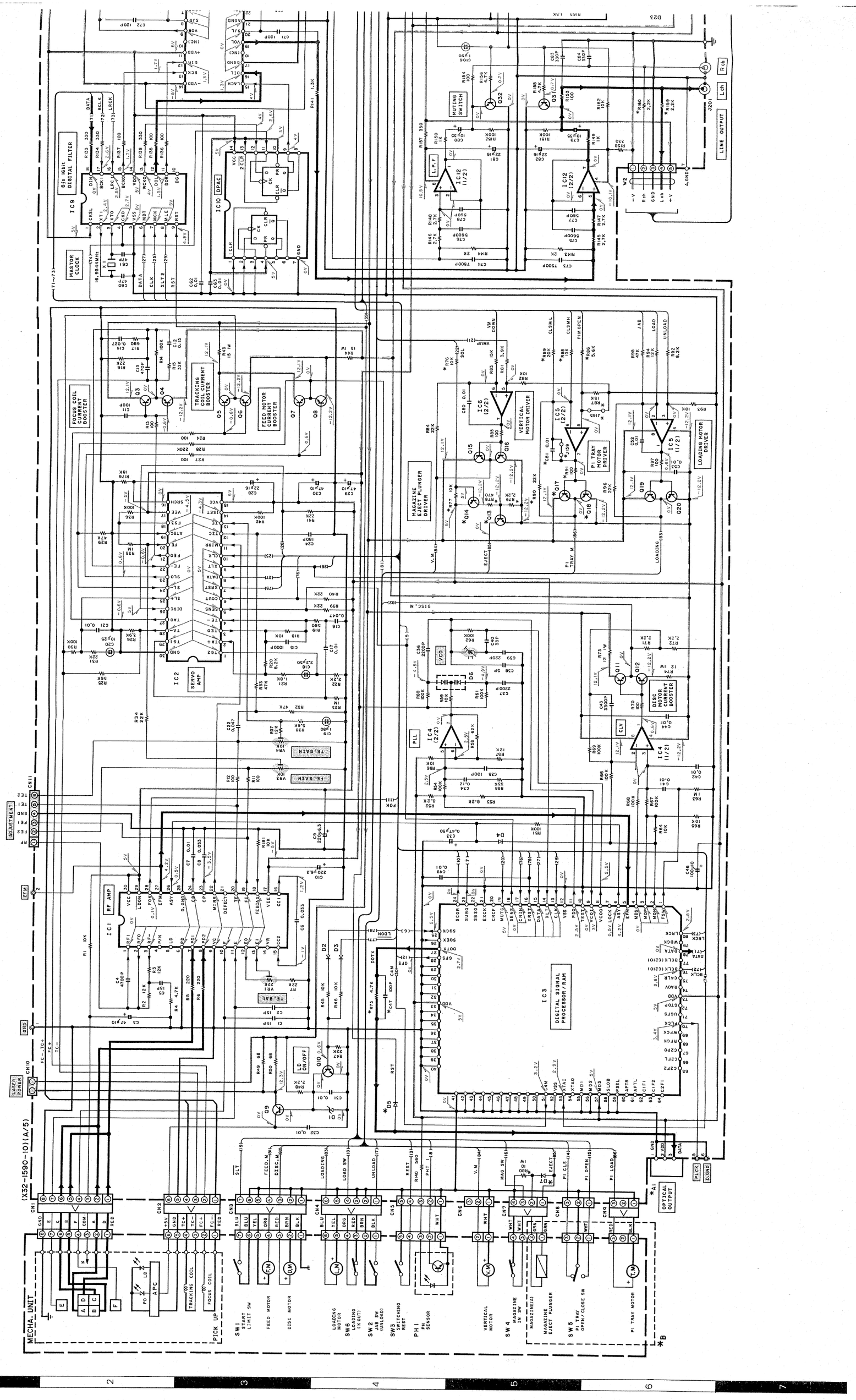
Refer to the schematic diagram for the values of resistors and capacitors.

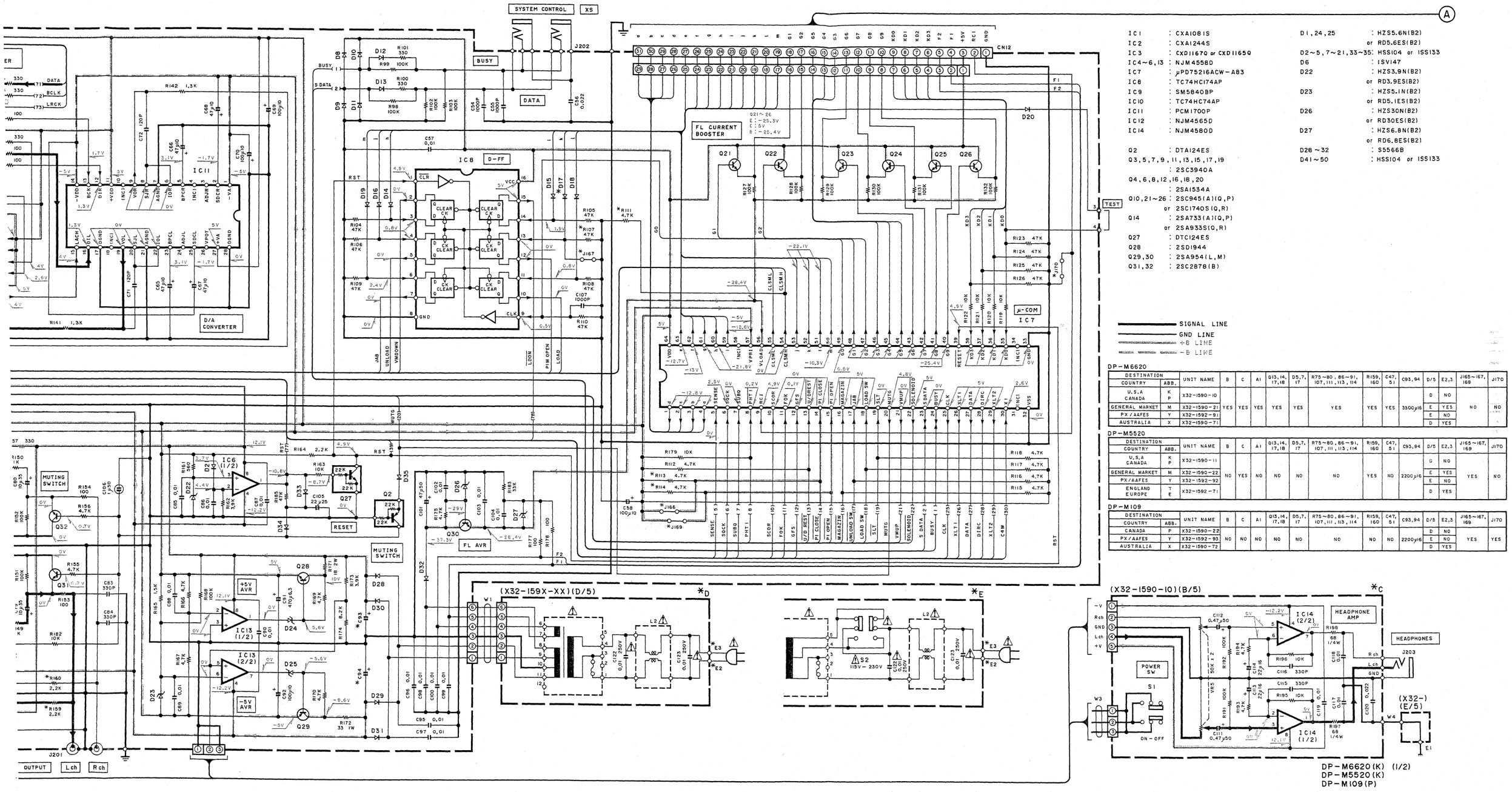


(b) VCO : 4.31MHz ± 10kHz



(a) Laser power : DC ≥ 1.0V


(X32-1590-10)(A/5)
MECHA. UNIT
PICK UP
SW1 START LIMIT SW
FEED MOTOR
DISC MOTOR
SW6 LOADING (K OUT)
LOADING MOTOR
SW2 JAB SW (UNLOAD)
SW3 SWITCHING REST
PH1 PH SENSOR
VERTICAL MOTOR
SW4 MAGAZINE IN SW
MAGAZINE(IN)
MAGAZINE EJECT PLUNGER
SW5 P1 TRAY OPEN/CLOSE SW
P1 TRAY MOTOR
OPTICAL OUTPUT
IC1 RF AMP
IC2 SERVO AMP
IC3 DIGITAL SIGNAL PROCESSOR/RAM
IC4 (1/2) CLV
IC4 (2/2) PLL
IC5 (1/2) LOADING MOTOR DRIVER
IC5 (2/2) P1 TRAY MOTOR DRIVER
IC6 (2/2) VERTICAL MOTOR DRIVER
IC9 BIT 16bit DIGITAL FILTER
IC10 DPAC
IC12 (1/2) L.P.F
IC12 (2/2)
MASTER CLOCK
16.9344MHz
FOCUS COIL CURRENT BOOSTER
TRACKING COIL CURRENT BOOSTER
FEED MOTOR CURRENT BOOSTER
MAGAZINE EJECT PLUNGER DRIVER
DISC MOTOR CURRENT BOOSTER
MUTING SWITCH
LINE OUTPUT
L ch
R ch
TE.GAIN
FE.GAIN
TE.BAL
LD ON/OFF
APC
ADJUSTMENT
LASER POWER
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11



IC1	: CXA1081S	D1,24,25	: HZS5.6N(B2)
IC2	: CXA1244S		or RD5.6ES(B2)
IC3	: CXD1167O or CXD1165Q	D2~5,7~21,33~35	: HSS104 or ISS133
IC4~6,13	: NJM4558D	D6	: ISV147
IC7	: μPD75216ACW-A83	D22	: HZS3.9N(B2)
IC8	: TC74HC174AP		or RD3.9ES(B2)
IC9	: SM5840BP	D23	: HZS5.1N(B2)
IC10	: TC74HC74AP		or RD5.1ES(B2)
IC11	: PCM1700P	D26	: HZS30N(B2)
IC12	: NJM4565D		or RD30ES(B2)
IC14	: NJM4580D	D27	: HZS6.8N(B2)
			or RD6.8ES(B2)
Q2	: DTA124ES	D28~32	: S5566B
Q3,5,7,9,11,13,15,17,19	: 2SC3940A	D41~50	: HSS104 or ISS133
Q4,6,8,12,16,18,20	: 2SA1534A		
Q10,21~26	: 2SC945(A)(Q,P)		
	or 2SC1740S(Q,R)		
Q14	: 2SA733(A)(Q,P)		
	or 2SA933S(Q,R)		
Q27	: DTC124ES		
Q28	: 2SD1944		
Q29,30	: 2SA954(L,M)		
Q31,32	: 2SC2878(B)		

DP-M6620

DESTINATION		UNIT NAME	B	C	A1	Q13,14,17,18	D5,7,17	R75~80,86~91,107,111,113,114	R159,160	C47,51	C93,94	D/5	E2,3	J165~167,169	J170
COUNTRY	ABB.														
U.S.A CANADA	K	X32-1590-10	YES	YES	YES	YES	YES	YES	YES	YES	3300μ16	D	NO	NO	NO
	P											E	YES		
GENERAL MARKET	M	X32-1590-21										E	NO		
PX/AAFES	Y	X32-1592-91										E	NO		
AUSTRALIA	X	X32-1590-71										D	YES		

DP-M5520

DESTINATION		UNIT NAME	B	C	A1	Q13,14,17,18	D5,7,17	R75~80,86~91,107,111,113,114	R159,160	C47,51	C93,94	D/5	E2,3	J165~167,169	J170
COUNTRY	ABB.														
U,S,A CANADA	K P	X32-1590-11	NO	YES	NO	NO	NO	NO	YES	NO	2200μ16	D	NO	YES	NO
GENERAL MARKET	M	X32-1590-22										E	YES		
PX/AAFES	Y	X32-1592-92										E	NO		
ENGLAND EUROPE	T E	X32-1592-71										D	YES		

DP-M109

DESTINATION		UNIT NAME	B	C	A1	Q13,14,17,18	D5,7,17	R75~80,86~91,107,111,113,114	R159,160	C47,51	C93,94	D/5	E2,3	J165~167,169	J170
COUNTRY	ABB.														
CANADA	P	X32-1590-22	NO	NO	NO	NO	NO	NO	NO	NO	2200μ16	D	NO	YES	YES
PX/AAFES	Y	X32-1592-93										E	NO		
AUSTRALIA	X	X32-1590-72										D	YES		

DP-M6620(K) (1/2)
DP-M5520(K)
DP-M109(P)

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

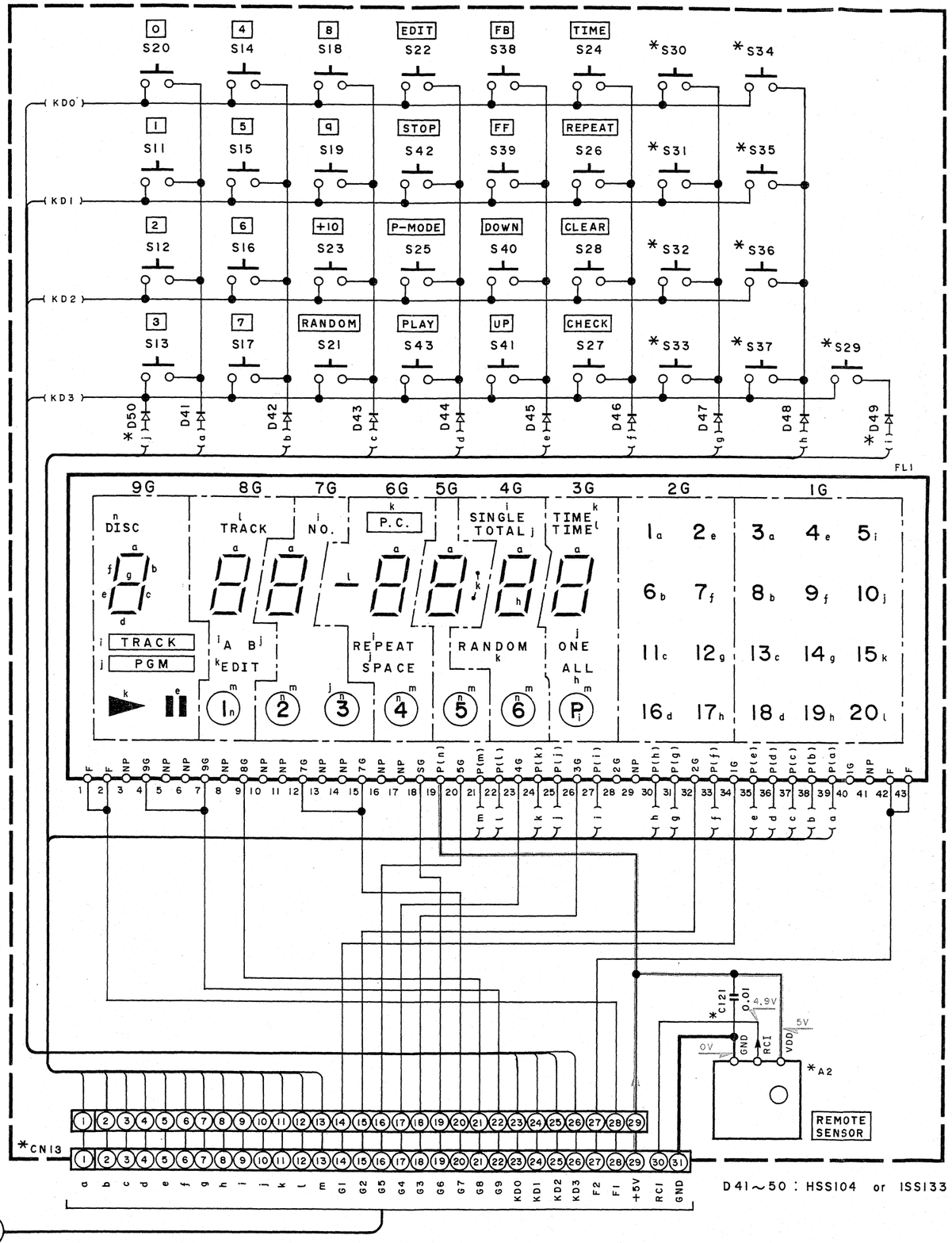
* DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

Y22-2040-00

DP-M109/5520/6620

KENWOOD

(X32-1590-10)



DP-M6620

DESTINATION		UNIT NAME	S29	S30	S31	S32	S33	S34	S35	S36	S37	D49, 50	A2, C121	CN13
COUNTRY	ABB.													
U.S.A CANADA	K P	X32-1590-10	EJECT	DISC1	DISC2	DISC3	DISC4	DISC5	DISC6	PI TRAY	OPEN/ CLOSE	YES	YES	31P
GENERAL MARKET	M	X32-1590-21												
PX/AAFES	Y	X32-1592-91												
AUSTRALIA	X	X32-1590-71												

DP-M5520

DESTINATION		UNIT NAME	S29	S30	S31	S32	S33	S34	S35	S36	S37	D49, 50	A2, C121	CN13
COUNTRY	ABB.													
U.S.A CANADA	K P	X32-1590-11	NO	NO	DISC1	DISC2	DISC3	DISC4	DISC5	DISC6	EJECT	NO	YES	31P
GENERAL MARKET	M	X32-1590-22												
PX/AAFES	Y	X32-1592-92												
ENGLAND EUROPE	T E	X32-1592-71												

DP-M109

DESTINATION		UNIT NAME	S29	S30	S31	S32	S33	S34	S35	S36	S37	D49, 50	A2, C121	CN13
COUNTRY	ABB.													
CANADA	P	X32-1590-12	NO	NO	DISC1	DISC2	DISC3	DISC4	DISC5	DISC6	EJECT	NO	NO	29P
PX/AAFES	Y	X32-1592-93												
AUSTRALIA	X	X32-1590-72												

GND LINE
+B LINE

2SA1534A
2SA733(A)
3SA954
2SC2878
2SC3940A
2SC945(A)

DTC124ES

DTA124ES
2SA933S
2SC1740S

2SD1944

NJM4558D
NJM4580D

PCM1700P

TC74HC74AP

TC74HC174AP

NJM4565D

CXA1081S
CXA1244S

CXD1167Q

μPD75216ACW-A83

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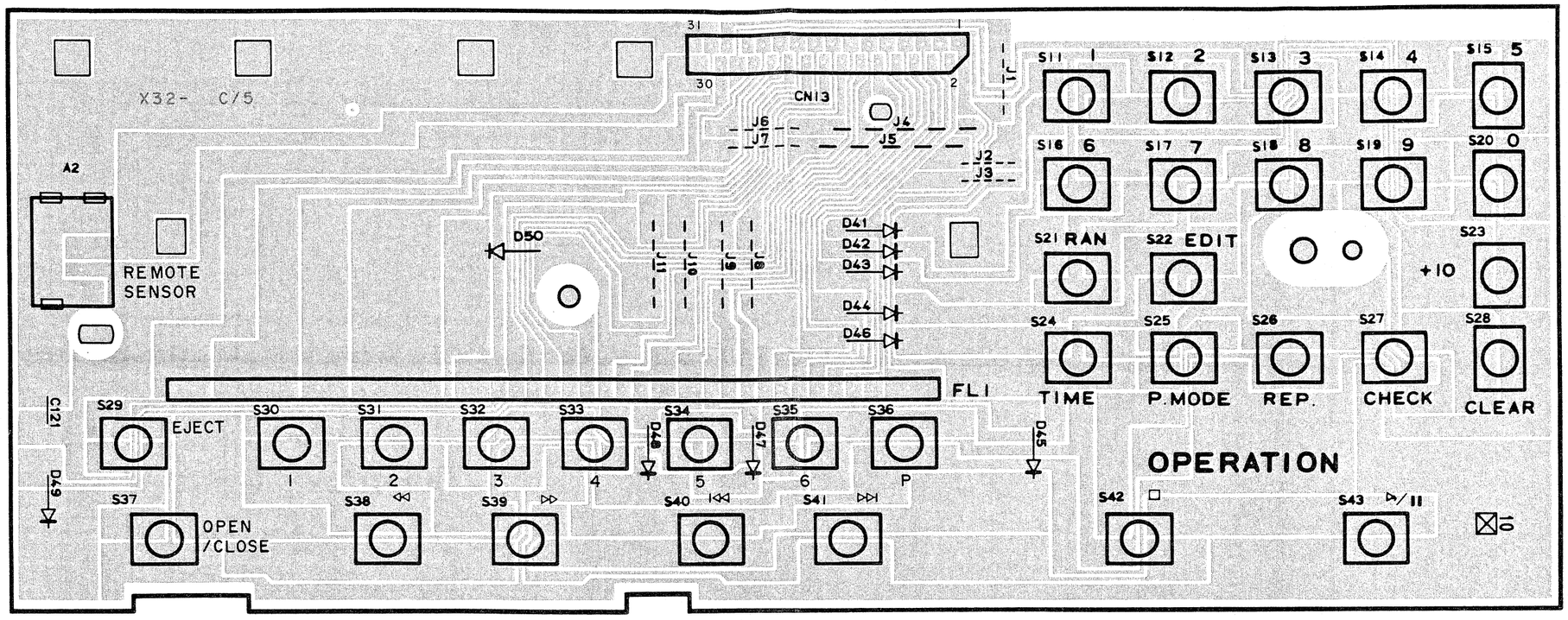
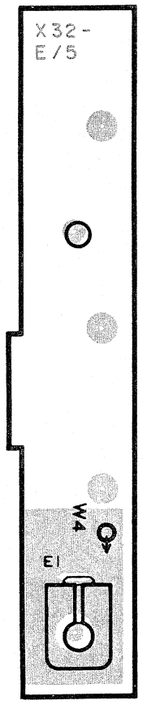
Y22-2040-00

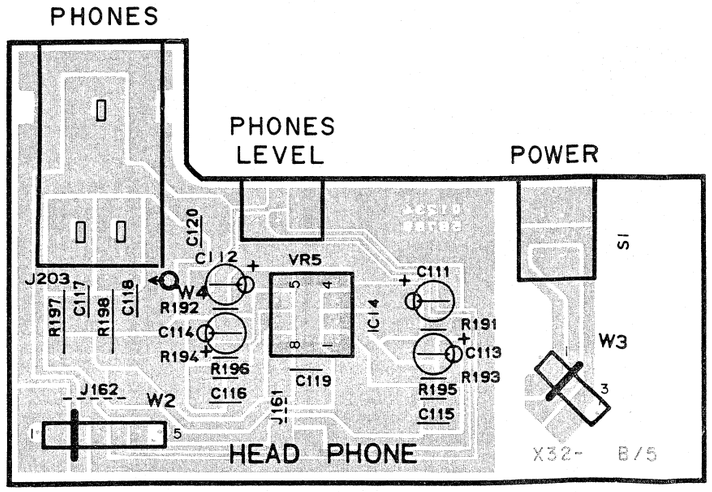
DP-M109/5520/6620

KENWOOD

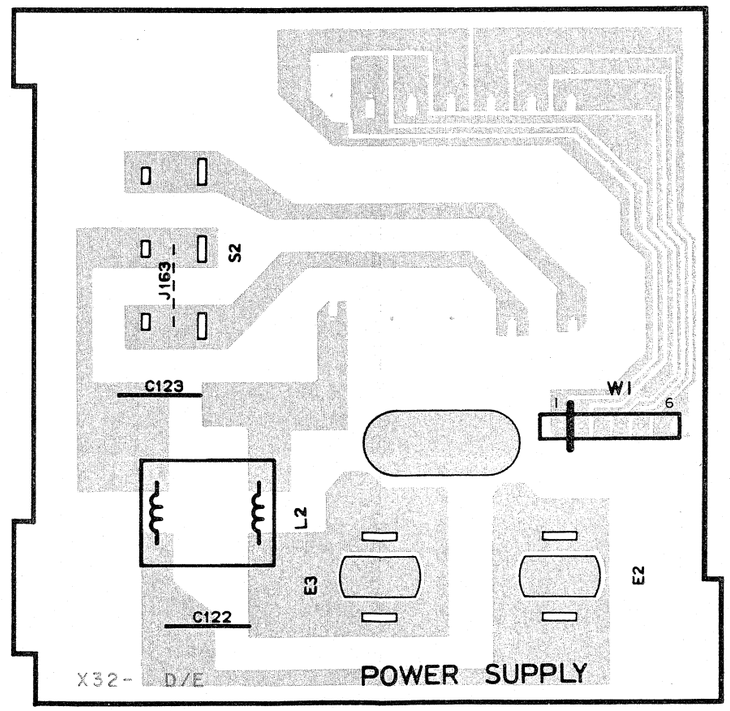
PC BOARD (COMPONENT SIDE VIEW)







Refer to the schematic diagram for the values of resistors and capacitors.



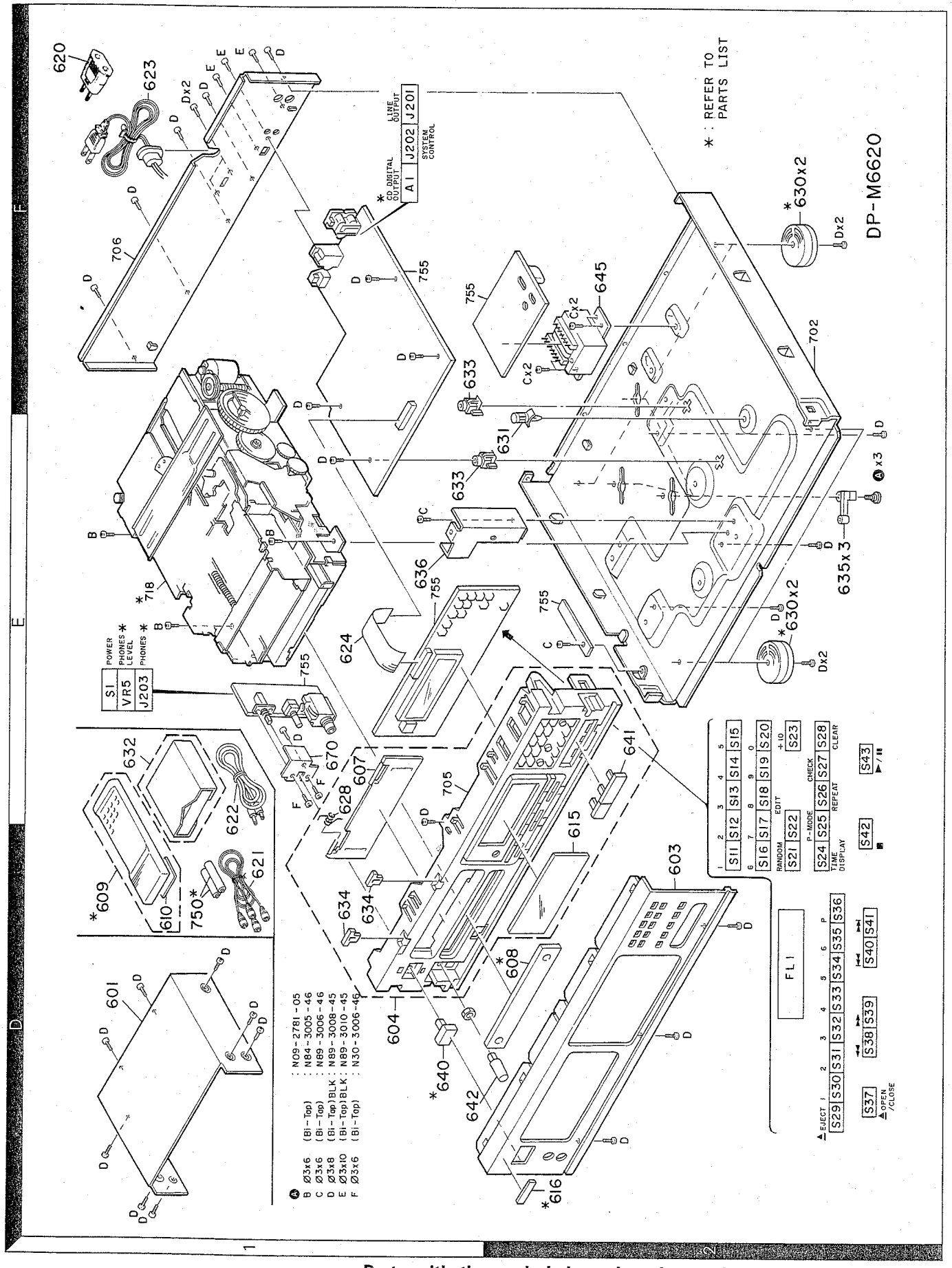
n a high impedance
y due to variations
end units.

place safety critical
recommended parts
ety critical compo-
ock, leakage-current
carried out (exposed
the supply circuit)
e customer.

20/6620

OD

EXPLODED VIEW (UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

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			DP-M6620			
601	1D	*	A01-1863-01	METALLIC CABINET		
603	2D	*	A20-6018-02	PANEL		
604	1D	*	A22-1192-03	SUB PANEL ASSY		
607	1E	*	A29-0164-03	PANEL (CD MAGAZINE)		
608	2D	*	A29-0165-03	PANEL (TRAY)		
609	1D	*	A70-0352-05	REMOCON ASSY(RC-PM6620)37KEYS		
610	1D	*	A09-0104-08	BATTERY COVER		
615	2E	*	B03-2643-04	DRESSING PLATE		
616	2D		B43-0287-04	KENWOOD BADGE		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-			B46-0096-13	WARRANTY CARD	X	
-			B46-0121-03	WARRANTY CARD	P	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-			B58-0891-03	CAUTION CARD		
-		*	B58-0915-04	CAUTION CARD		
-		*	B60-0029-00	INSTRUCTION MANUAL(ENGLISH)		
-		*	B60-0030-00	INSTRUCTION MANUAL(FRENCH)	P	
-			B60-0031-00	INSTRUCTION MANUAL(SPAN,CHAIN)	M	
⚠ 620	1F		E03-0115-05	AC PLUG ADAPTER	M	
621	1D		E30-0505-05	AUDIO CORD		
622	1E		E30-1392-05	CORD WITH PLUG		
⚠ 623	1F	*	E30-2588-15	AC POWER CORD	X	
⚠ 623	1F	*	E30-2590-15	AC POWER CORD	M	
⚠ 623	1F	*	E30-2603-15	AC POWER CORD	Y	
⚠ 623	1F	*	E30-2617-05	AC POWER CORD	KP	
624	1E	*	E31-4599-05	WIRING HARNESS		
628	1E		G09-0089-04	SPRING		
-		*	H01-8772-04	ITEM CARTON CASE		
-		*	H10-3987-02	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-3988-02	POLYSTYRENE FOAMED FIXTURE		
-			H20-0554-04	PROTECTION COVER	M	
-		*	H21-0276-04	PROTECTION SHEET		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0319-04	PROTECTION BAG	KPYX	
630	2E,2F		J02-1034-05	FOOT		
631	2E		J19-2598-05	HOLDER		
632	1E		J19-3050-03	MAGAZINE ASSY		
633	1E,1F	*	J19-3179-05	UNIT HOLDER		
634	1D	*	J19-3283-04	HOLDER		
635	2E	*	J19-3285-04	HOLDER		
636	1E	*	J21-5596-04	MOUNTING HARDWARE		
-			J61-0307-05	WIRE BAND		
640	1D		K27-2004-04	KNOB (BUTTON)(POWER)		
641	2E		K29-3920-04	KNOB (STOP PLAY/PAUSE)		
642	1D		K29-3928-04	KNOB (PHONES LEVEL)		
⚠ 645	2F	*	L07-0108-05	POWER TRANSFORMER	KP	
⚠ 645	2F	*	L07-0109-05	POWER TRANSFORMER	X	
⚠ 645	2F	*	L07-0110-05	POWER TRANSFORMER	MY	

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DP-M109/5520/6620

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A	2E	*	N09-2781-05	MACHINE SCREW		
B	1E	*	N84-3005-46	PAN HEAD TIPTITE SCREW		
C	2E		N89-3006-46	BINDING HEAD TAPTITE SCREW		
D	1D,1F		N89-3008-45	BINDING HEAD TAPTITE SCREW		
E	1F		N89-3010-45	BINDING HEAD TAPTITE SCREW		
			DP-M5520			
601	1D		A01-1863-01	METALLIC CABINET		
603	2D	*	A20-6019-02	PANEL		
604	1D	*	A22-1194-03	SUB PANEL ASSY		
607	1E		A29-0164-03	PANEL (CD MAGAZINE)		
609	1D	*	A70-0353-05	REMOCON ASSY(RC-PM5520)35KEYS		
610	1D	*	A09-0104-08	BATTERY COVER		
615	2E	*	B03-2644-04	DRESSING PLATE		
616	2D		B43-0287-04	KENWOOD BADGE		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-			B46-0121-03	WARRANTY CARD	P	
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0143-13	WARRANTY CARD	T	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-			B58-0891-03	CAUTION CARD		
-		*	B58-0915-04	CAUTION CARD		
-		*	B60-0034-00	INSTRUCTION MANUAL(ENGLISH)		
-		*	B60-0035-00	INSTRUCTION MANUAL(FRENCH)	PE	
-		*	B60-0036-00	INSTRUCTION MANUAL(SP,ARA,CHA)		
-		*	B60-0037-00	INSTRUCTION MANUAL(GER,DUT,IT)	E	
⚠ 620	1F		E03-0115-05	AC PLUG ADAPTER	M	
621	1D		E30-0505-05	AUDIO CORD		
622	1E		E30-1392-05	CORD WITH PLUG	KPMY	
⚠ 623	1F	*	E30-2589-15	AC POWER CORD	T	
⚠ 623	1F	*	E30-2590-15	AC POWER CORD	ME	
⚠ 623	1F		E30-2603-15	AC POWER CORD	Y	
⚠ 623	1F		E30-2617-05	AC POWER CORD	KP	
624	1E		E31-4599-05	WIRING HARNESS (31P)		
628	1E		G09-0089-04	SPRING		
-			H01-8774-04	ITEM CARTON CASE		
-			H10-3987-02	POLYSTYRENE FOAMED FIXTURE		
-			H10-3988-02	POLYSTYRENE FOAMED FIXTURE		
-			H20-0554-04	PROTECTION COVER	M	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0319-04	PROTECTION BAG	KPYTE	
630	2E,2F		J02-1034-05	FOOT		
631	2E		J19-2598-05	HOLDER		
632	1E		J19-3050-03	MAGAZINE ASSY		
633	1E,1F	*	J19-3179-05	UNIT HOLDER		
634	1D	*	J19-3283-04	HOLDER		
635	2E	*	J19-3285-04	HOLDER		
636	1E	*	J21-5596-04	MOUNTING HARDWARE		
-			J61-0307-05	WIRE BAND		
640	1D		K27-2004-04	KNOB (BUTTON)(POWER)		
641	2E		K29-3920-04	KNOB (STOP PLAY/PAUSE)		

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642	1D		K29-3928-04	KNOB (PHONES LEVEL)		
645	2F		L07-0108-05	POWER TRANSFORMER	KP	
645	2F		L07-0109-05	POWER TRANSFORMER	TE	
645	2F		L07-0110-05	POWER TRANSFORMER	MY	
A	2E		N09-2781-05	MACHINE SCREW		
B	1E	*	N84-3005-46	PAN HEAD TIPTITE SCREW		
C	2E		N89-3006-46	BINDING HEAD TAPTITE SCREW		
D	1D,1F		N89-3008-45	BINDING HEAD TAPTITE SCREW		
E	1F		N89-3010-45	BINDING HEAD TAPTITE SCREW		
DP-M109						
601	1D		A01-1863-01	METALLIC CABINET		
603	2D	*	A20-6020-02	PANEL		
604	1D	*	A22-1196-03	SUB PANEL ASSY		
607	1E		A29-0164-03	PANEL (CD MAGAZINE)		
615	2E	*	B03-2645-04	DRESSING PLATE		
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-			B46-0096-13	WARRANTY CARD	X	
-			B58-0891-03	CAUTION CARD		
-		*	B58-0915-04	CAUTION CARD		
-		*	B60-0169-00	INSTRUCTION MANUAL(ENGLISH)		
621	1D		E30-0505-05	AUDIO CORD		
622	1E		E30-1392-05	CORD WITH PLUG		
⚠ 623	1F	*	E30-2588-15	AC POWER CORD	X	
⚠ 623	1F	*	E30-2603-15	AC POWER CORD	Y	
624	1E	*	E31-7616-05	WIRING HARNESS (29P)		
628	1E		G09-0089-04	SPRING		
-		*	H01-8775-04	ITEM CARTON CASE		
-			H10-3987-02	POLYSTYRENE FOAMED FIXTURE		
-			H10-3988-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0319-04	PROTECTION BAG		
630	2E,2F		J02-1013-05	FOOT		
631	2E		J19-2598-05	HOLDER		
632	1E		J19-3050-03	MAGAZINE ASSY		
633	1E,1F	*	J19-3179-05	UNIT HOLDER		
634	1D	*	J19-3283-04	HOLDER		
635	2E	*	J19-3285-04	HOLDER		
636	1E	*	J21-5596-04	MOUNTING HARDWARE		
-			J61-0307-05	WIRE BAND		
640	1D		K27-2004-04	KNOB (BUTTON)(POWER)		
641	2E		K29-3920-04	KNOB (STOP PLAY/PAUSE)		
⚠ 645	2F		L07-0109-05	POWER TRANSFORMER	X	
⚠ 645	2F		L07-0110-05	POWER TRANSFORMER	Y	
A	2E		N09-2781-05	MACHINE SCREW		
B	1E	*	N84-3005-46	PAN HEAD TIPTITE SCREW		
C	2E		N89-3006-46	BINDING HEAD TAPTITE SCREW		
D	1D,1F		N89-3008-45	BINDING HEAD TAPTITE SCREW		
E	1F	*	N89-3010-08	BINDIMG HEAD TAPTITE SCREW		
CONTROL (X32-1590-10)						
C1 ,2			CC45FSL1H150J	CERAMIC 15PF J		

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DP-M109/5520/6620

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C3			CE04KW1A470M	ELECTRO	47UF	10WV		
C4			CF92FV1H472J	MF	4700PF	J		
C5			CC45FSL1H150J	CERAMIC	15PF	J		
C6			CF92FV1H333J	MF	0.033UF	J		
C7			CF92FV1H103J	MF	0.010UF	J		
C8			CF92FV1H333J	MF	0.033UF	J		
C9 ,10			CE04KW0J221M	ELECTRO	220UF	6.3WV		
C11			CC45FSL1H101J	CERAMIC	100PF	J		
C12			CF92FV1H154J	MF	0.15UF	J		
C13			CK45FB1H471K	CERAMIC	470PF	K		
C14			CF92FV1H273J	MF	0.027UF	J		
C15			CK45FB1H102K	CERAMIC				
C16			CF92FV1H473J	MF	0.047UF	J		
C17			CF92FV1H103J	MF	0.010UF	J		
C18			C90-1350-05	NP-ELEC	2.2UF	50WV		
C19			C90-1349-05	NP-ELEC	1UF	50WV		
C20			C90-1332-05	NP-ELEC	10UF	25WV		
C21			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C22			CF92FV1H473J	MF	0.047UF	J		
C24			CC45FSL1H181J	CERAMIC	180PF	J		
C28			CE04KW1C220M	ELECTRO	22UF	16WV		
C29 ,30			CE04KW1A470M	ELECTRO	47UF	10WV		
C31 ,32			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C33			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C34			CF92FV1H124J	MF	0.12UF	J		
C35			CC45FSL1H101J	CERAMIC	100PF	J		
C36 ,37			CK45FB1H222K	CERAMIC	2200PF	K		
C38			CC45FUJ1H050C	CERAMIC	5.0PF	C		
C39			CC45FUJ1H221J	CERAMIC	220PF	J		
C40			CC45FUJ1H330J	CERAMIC	33PF	J		
C41 ,42			CF92FV1H103J	MF	0.010UF	J		
C43			CF92FV1H332J	MF	3300PF	J		
C44			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C46			CE04KW1A101M	ELECTRO	100UF	10WV		
C47			CC45FSL1H101J	CERAMIC	100PF	J		
C49 -53			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C54 ,55			CK45FB1H102K	CERAMIC				
C56			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C57			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C58			CE04KW1A101M	ELECTRO	100UF	10WV		
C60 ,61			CC45FCH1H470J	CERAMIC	47PF	J		
C62 ,63			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C65 -68			CE04KW1A470M	ELECTRO	47UF	10WV		
C69 ,70			CE04KW1A101M	ELECTRO	100UF	10WV		
C71 ,72			CF92FV1H121K	MF	120PF	K		
C73 ,74			CF92FV1H752J	MF	7500PF	J		
C75 ,76			CF92FV1H562J	MF	5600PF	J		
C77 ,78			CF92FV1H561J	MF	560PF	J		
C79 ,80			CE04KW1V100M	ELECTRO	10UF	35WV		
C81 ,82			CE04KW1C220M	ELECTRO	22UF	16WV		
C83 ,84			CF92FV1H331K	MF	330PF	K		
C85 -90			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C91			CE04KW0J471M	ELECTRO	470UF	6.3WV		
C92			CE04KW1A101M	ELECTRO	100UF	10WV		
C93 ,94			CE04KW1C332M	ELECTRO	3300UF	16WV		

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	C95 -100			CK45FF1H103Z	CERAMIC 0.010UF Z		
	C101			CE04KW1H470M	ELECTRO 47UF 50WV		
	C102-104			CK45FF1H103Z	CERAMIC 0.010UF Z		
⚠	C105		*	C91-0353-05	POLYPRO 0.0068UF 630WV		
	C106			C90-1349-05	NP-ELEC 1UF 50WV		
	C107			CK45FF1H103Z	CERAMIC 0.010UF Z		
	C111,112			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
	C113,114			CE04KW1C220M	ELECTRO 22UF 16WV		
	C115,116			CC45FSL1H331J	CERAMIC 330PF J		
	C117-119			CK45FF1H103Z	CERAMIC 0.010UF Z		
	C120			CK45FF1H223Z	CERAMIC 0.022UF Z		
	C121			CK45FF1H103Z	CERAMIC 0.010UF Z		
⚠	C122,123			C91-0971-05	FILM 0.01UF 250WV		
	CN12,13			E10-3101-05	FLAT CABLE CONNECTOR		
	J201			E13-0244-05	PHONO JACK		
	J202			E11-0188-05	MINIATURE PHONE JACK		
	J203			E11-0189-05	PHONE JACK		
	670	1E	*	J21-5597-04	MOUNTING HARDWARE		
	-			J11-0098-05	WIRE CLAMPER		
	L1			L32-0355-05	OSCILATING COIL		
⚠	L2			L79-0785-05	LINE FILTER		
	X1			L77-1164-05	CRYSTAL RESONATOR		
	F	1E		N30-3006-46	PAN HEAD MACHINE SCREW		
	R43 ,44			RS14KB3A150J	FL-PROOF RS 15 J 1W		
	R73 ,74			RS14KB3A120J	FL-PROOF RS 12 J 1W		
	R80			RS14KB3A100J	FL-PROOF RS 10 J 1W		
	R171			RS14KB3D180J	FL-PROOF RS 18 J 2W		
	R172			RS14KB3A330J	FL-PROOF RS 33 J 1W		
	VR1 ,2			R12-3128-05	TRIMMING POT.(22K)		
	VR3 ,4			R12-3126-05	TRIM POT. 10K		
	VR5			R10-4019-05	POTENTIOMETER(50KX2)		
	S1			S40-2371-05	PUSH SWITCH		
⚠	S2			S31-2131-05	SLIDE SWITCH (POWER TYPE)	MY	
	S11 -43			S40-1064-05	PUSH SWITCH		
	D1			HZS5.6N(B2)	ZENER DIODE		
	D1			RD5.6ES(B2)	ZENER DIODE		
	D2 -5			HSS104	DIODE		
	D2 -5			1SS133	DIODE		
	D6			1SV147	VARISTOR		
	D7 -21			HSS104	DIODE		
	D7 -21			1SS133	DIODE		
	D22			HZS3.9N(B2)	ZENER DIODE		
	D22			RD3.9ES(B2)	ZENER DIODE		
	D23			HZS5.1N(B2)	ZENER DIODE		
	D23			RD5.1ES(B2)	ZENER DIODE		
	D24 ,25			HZS5.6N(B2)	ZENER DIODE		
	D24 ,25			RD5.6ES(B2)	ZENER DIODE		
	D26			HZS30N(B)	ZENER DIODE		
	D26			RD30ES(B)	ZENER DIODE		
	D27			HZS6.8N(B2)	ZENER DIODE		
	D27			RD6.8ES(B2)	ZENER DIODE		
	D28 -32			S5566B	DIODE		

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D33 -35			HSS104	DIODE		
D33 -35			1SS133	DIODE		
D41 -50			HSS104	DIODE		
D41 -50			1SS133	DIODE		
FL1		*	FIP9BTM7	FLUORESCENT INDICATOR TUBE		
IC1			CXA1081S	IC(RF AMP)		
IC2			CXA1244S	IC(SERVO SIGNAL PROCESSOR)		
IC3			CXD1167Q	IC (DSP) or CXD1165Q		
IC4 -6			NJM4558D	IC(OP AMP X2)		
IC7		*	UPD75216ACW-A83	IC(MICROPROCESSOR)		
IC8			TC74HC174AP	IC(D TYPE FLIP FLOP)		
IC9		*	SM5840BP	IC		
IC10			TC74HC74AP	IC(DUAL D-TYPE FLIP FLOP)		
IC11		*	PCM1700P	IC(ｼﾁ CONVERTER))		
IC12			NJM4565D	IC(OP AMP X2)		
IC13			NJM4558D	IC(OP AMP X2)		
IC14			NJM4580D	IC		
Q2			DTA124ES	TRANSISTOR		
Q3			2SC3940A	TRANSISTOR		
Q4			2SA1534A	TRANSISTOR		
Q5			2SC3940A	TRANSISTOR		
Q6			2SA1534A	TRANSISTOR		
Q7			2SC3940A	TRANSISTOR		
Q8			2SA1534A	TRANSISTOR		
Q9			2SC3940A	TRANSISTOR		
Q10			2SC1740S(Q,R)	TRANSISTOR		
Q10			2SC945(A)(Q,P)	TRANSISTOR		
Q11			2SC3940A	TRANSISTOR		
Q12			2SA1534A	TRANSISTOR		
Q13			2SC3940A	TRANSISTOR		
Q14			2SA733(A)(Q,P)	TRANSISTOR		
Q14			2SA933S(Q,R)	TRANSISTOR		
Q15			2SC3940A	TRANSISTOR		
Q16			2SA1534A	TRANSISTOR		
Q17			2SC3940A	TRANSISTOR		
Q18			2SA1534A	TRANSISTOR		
Q19			2SC3940A	TRANSISTOR		
Q20			2SA1534A	TRANSISTOR		
Q21 -26			2SC1740S(Q,R)	TRANSISTOR		
Q21 -26			2SC945(A)(Q,P)	TRANSISTOR		
Q27			DTC124ES	DIGITAL TRANSISTOR		
Q28			2SD1944	TRANSISTOR		
Q29 ,30			2SA954(L,K)	TRANSISTOR		
Q31 ,32			2SC2878(B)	TRANSISTOR		
A1		*	W02-1044-05	TRANSMITTING ASSY	M6620	
A2			W02-0975-05	ELECTRIC CIRCUIT MODULE		
MECHANISM (D40-0917-05)						
1	4C	*	A10-2672-08	CHASSIS CALKED ASSY		
2	1B	*	F39-0052-08	REINFORCED HARDWARW		
3	3C	*	J19-3255-08	BRACKET		
6	4C	*	D13-0840-08	GEAR(LIFT A)		
7	4C	*	D10-2375-08	LEVER ASSY(A)		
8	3B,4C	*	G01-2240-08	TENSION SPRING		
9	4C	*	D13-0841-08	GEAR(LIFT B)		

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10	4C	*	D10-2376-08	LEVER ASSY(B)		
11	4B,4C	*	D13-0842-08	GEAR(LIFT C)		
12	4A,4C	*	D13-0843-08	GEAR(LIFT D)		
13	4B	*	D21-1566-08	SHAFT		
14	3B	*	D10-2377-08	LEVER ASSY(E)		
16	3B	*	G01-22410-8	TENSION SPRING		
17	3B	*	D13-0844-08	GEAR LIFT(C)		
18	3A	*	D10-2378-08	LEVER(F)		
19	4C	*	J19-3256-08	BRACKET(LIFT M)		
20	4C	*	D16-0293-08	BELT(LIFT M)		
21	4C	*	D15-0300-08	PULLEY(LIFT M)		
23	4C	*	D13-0845-08	GEAR ASSY(WARM)		
24	4C	*	J31-0836-08	COLLAR(SLEEVE)		
30	2A	*	A11-0650-08	SUB CHASSIS ASSY(GUIDE BASE)		
32	1A	*	J90-0646-08	GUIDE(L), MAGAZINE		
33	1A	*	J90-0647-08	GUIDE(R), MAGAZINE		
34	2A	*	G01-2442-08	TORSION SPRING(RELEASE)		
35	2A	*	D10-2379-08	LEVER(RELEASE)		
36	2A	*	N09-2731-08	STEPPED SCREW		
37	1A	*	D10-2380-08	LEVER(LOCK)		
38	1A	*	G01-2443-08	TENSION SPRING		
39	1A	*	F07-0570-08	COVER(HOLDER)		
42	1A	*	G01-2245-08	TENSION SPRING(MAGAZINE LOCK)		
43	1A	*	D10-2381-08	LEVER(MAGAZINE LOCK)		
44	1A	*	D32-0189-08	STOPPER(TRY)		
45	1A	*	G01-2446-08	TORSION SPRING(TRAY STOPPER)		
47	1C	*	J31-0840-08	COLLAR	M5520	
48	1C	*	D10-2392-08	KICK LEVER	M5520	
55	3B	*	A11-0651-08	SUB CHASSIS ASSY(LIFT BASE)		
56	3B	*	D10-2382-08	ARM ASSY(GUIDE PLATE)		
57	2B	*	D10-2383-08	SLIDER		
58	2B	*	D10-2384-08	SLIDER(GUIDE PLATE L)		
59	3B	*	D21-1567-08	BEARING		
60	3B	*	J90-0648-08	GUIDE		
61	2C	*	D10-2385-08	SILDER(GUIDE PLATE R)		
62	3C	*	J19-3257-08	HODER(WIRE)		
63	3C	*	J11-0158-08	WIRE CLAMPER		
65	2B	*	D15-0301-08	PULLEY(SLIDE M)		
66	1A	*	D19-3258-08	BRACKET(SLIDE M)		
68	2B	*	D13-0846-08	WARM ASSY		
69	1B	*	D10-2386-08	ARM ASSY(SLIDER)		
70	3B	*	D13-0847-08	GEAR(SIDE WARM WHEEL)		
71	1C	*	D10-2387-08	ARM ASSY(SLIDE CONNECTION)		
72	1C	*	D10-2388-08	SLIDER ASSY		
73	1C	*	J31-0837-08	COLLAR(CONNECTION ARM)		
74	3C	*	A11-0652-08	SUB CHASSIS(DRIVE BASE)		
76	1B	*	D16-0294-08	BELT(SILDE M)		
77	1B	*	J19-3259-08	BRACKET(SLIDE WHEEL)		
78	3B	*	D10-2389-08	LOD(PICKUP)		
80	2B,2C	*	J02-1056-08	INSULATOR(RUBBER)		
81	2C	*	G01-2448-08	COMPRESSION SPRING(FLOATING SPB		
82	2B	*	G01-2449-08	COMPRESSION SPRING(FLOATING SPA		
83	2B,2C	*	N09-2732-08	STEPPED SCREW(FLOATING)		
86	2B	*	D15-0302-08	PULLEY(T/T B)		
87	2B	*	D16-0295-08	BELT(TURNTABLE)		

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DP-M109/5520/6620

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88	2B	*	G02-0948-08	PLATE SPRING(THRUST)		
89	2C	*	J19-3260-08	HOLDER(GUIDE SHAFT BASE)		
90	2B,2C	*	J39-0156-08	SPACE(HEIGHT)		
91	2B	*	J19-3261-08	HOLDER(FEED MOTOR BASE)		
92	2B	*	G02-0949-08	PLATE SPRING(SHAFT STOPPER L)		
93	2B	*	G02-0950-08	PLATE SPRING(SHAFT STOPPER R)		
95	3B	*	J19-3262-08	BRACKET(FEED MOTOR)		
96	3B	*	D15-0303-08	PULLEY(FEED MOTOR)		
97	3B	*	D16-0296-08	BELT(FEED)		
98	3B	*	D21-1568-08	SHAFT ASSY(SCREW ASSY)		
100	3B	*	J19-3263-08	HOLDER(NUT BLOCK)		
101	3B	*	G02-0951-08	PLATE SPRING(NUT)		
106	1C	*	A11-0654-08	SUB CHASSIS(ELEVATOR)		
107	2B	*	J90-0649-08	RAIL(L)		
108	2B	*	J11-0159-08	CLAMPER		
109	2C	*	J90-0650-08	RAIL(R)		
110	1B,2C	*	G02-0952-08	PLATE SPRING(TRAY)		
111	1C	*	J90-0651-08	GUIDE(ELEVATOR)		
112	1C	*	T99-0502-08	MAGNET		
113	1C	*	T50-1053-08	YOKE		
114	1B	*	D19-0259-08	PIN(LIFT)		
115	1B	*	G02-0953-08	PLATE SPRING(LIFT UP)		
116	4A	*	E31-7556-08	WIRE HARNESS		
120	4B	*	J19-3264-08	BRACKET(SWITCH)		
121	3C	*	J19-3265-08	BRACKET(SENSER)		
123	4C	*	G01-2540-08	TENSION SPRING(SENER BRACKET)		
124	1A	*	E31-7559-08	WIRE HARNESS		
127	3C	*	E31-7562-08	WIRE HARNESS		
129	3B,4B	*	E31-7563-08	WIRE HARNESS(8P,PICKUP)		
130	3B,3C	*	E31-7564-08	WIRE HARNESS(6P,PICKUP)		
131	3B	*	E23-0348-08	LUG BOARD		
136	3C	*	E31-7565-08	WIRE HARNESS		
137	4C	*	F07-0571-08	COVER(EDGE)		
138	2C	*	G02-0954-08	PLATE SPRING(HOOK)		
142	1B,1C	*	N84-2004-46	SCREW		
143	4A,2B	*	N84-2003-46	SCREW		
144	2C	*	N09-2733-08	SCREW		
145	3B	*	N30-2625-46	SCREW		
146	4B,4C	*	N29-0208-04	SCREW		
147	4A,4C	*	N29-0207-04	SCREW		
148	1A	*	N09-2734-08	SCREW		
149	1B,3B	*	N19-1231-08	SCREW		
150	4A,4C	*	N09-1537-05	SCREW		
151	1A,1B	*	N09-2736-08	SCREW		
153	1C,2C	*	N09-2737-08	SCREW		
154	1B	*	N19-1227-08	SCREW		
155	2C	*	N19-1228-08	SCREW		
156	3B,3C	*	N09-1532-05	SCREW		
157	3A,3B	*	N09-2738-08	SCREW		
158	2B	*	N19-1229-08	SCREW		
160	3C	*	N09-2740-08	SCREW		
161	3B	*	N09-2741-08	SCREW		
163	3B	*	N09-2743-08	SCREW		
164	2C	*	N09-2744-08	SCREW		
166	3C	*	N30-3035-46	SCREW		

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89	2C	*	J19-3260-08	HOLDER(GUIDE SHAFT BASE)		
90	2B,2C	*	J39-0156-08	SPACE(HEIGHT)		
91	2B	*	J19-3261-08	HOLDER(FEED MOTOR BASE)		
92	2B	*	G02-0949-08	PLATE SPRING(SHAFT STOPPER L)		
93	2B	*	G02-0950-08	PLATE SPRING(SHAFT STOPPER R)		
95	3B	*	J19-3262-08	BRACKET(FEED MOTOR)		
96	3B	*	D15-0303-08	PULLEY(FEED MOTOR)		
97	3B	*	D16-0296-08	BELT(FEED)		
98	3B	*	D21-1568-08	SHAFT ASSY(SCREW ASSY)		
100	3B	*	J19-3263-08	HOLDER(NUT BLOCK)		
101	3B	*	G02-0951-08	PLATE SPRING(NUT)		
106	1C	*	A11-0654-08	SUB CHASSIS(ELEVATOR)		
107	2B	*	J90-0649-08	RAIL(L)		
108	2B	*	J11-0159-08	CLAMPER		
109	2C	*	J90-0650-08	RAIL(R)		
110	1B,2C	*	G02-0952-08	PLATE SPRING(TRAY)		
111	1C	*	J90-0651-08	GUIDE(ELEVATOR)		
112	1C	*	T99-0502-08	MAGNET		
113	1C	*	T50-1053-08	YOKE		
114	1B	*	D19-0259-08	PIN(LIFT)		
115	1B	*	G02-0953-08	PLATE SPRING(LIFT UP)		
116	4A	*	E31-7556-08	WIRE HARNESS		
120	4B	*	J19-3264-08	BRACKET(SWITCH)		
121	3C	*	J19-3265-08	BRACKET(SENSER)		
123	4C	*	G01-2540-08	TENSION SPRING(SENER BRACKET)		
124	1A	*	E31-7559-08	WIRE HARNESS		
127	3C	*	E31-7562-08	WIRE HARNESS		
129	3B,4B	*	E31-7563-08	WIRE HARNESS(8P,PICKUP)		
130	3B,3C	*	E31-7564-08	WIRE HARNESS(6P,PICKUP)		
131	3B	*	E23-0348-08	LUG BOARD		
136	3C	*	E31-7565-08	WIRE HARNESS		
137	4C	*	F07-0571-08	COVER(EDGE)		
138	2C	*	G02-0954-08	PLATE SPRING(HOOK)		
142	1B,1C	*	N84-2004-46	SCREW		
143	4A,2B	*	N84-2003-46	SCREW		
144	2C	*	N09-2733-08	SCREW		
145	3B	*	N30-2625-46	SCREW		
146	4B,4C	*	N29-0208-04	SCREW		
147	4A,4C	*	N29-0207-04	SCREW		
148	1A	*	N09-2734-08	SCREW		
149	1B,3B	*	N19-1231-08	SCREW		
150	4A,4C	*	N09-1537-05	SCREW		
151	1A,1B	*	N09-2736-08	SCREW		
153	1C,2C	*	N09-2737-08	SCREW		
154	1B	*	N19-1227-08	SCREW		
155	2C	*	N19-1228-08	SCREW		
156	3B,3C	*	N09-1532-05	SCREW		
157	3A,3B	*	N09-2738-08	SCREW		
158	2B	*	N19-1229-08	SCREW		
160	3C	*	N09-2740-08	SCREW		
161	3B	*	N09-2741-08	SCREW		
163	3B	*	N09-2743-08	SCREW		
164	2C	*	N09-2744-08	SCREW		
166	3C	*	N30-3035-46	SCREW		

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167	3B	*	N09-2745-08	SCREW		
168	3C	*	N09-2746-08	SCREW		
169	2C,3C	*	N09-2747-08	SCREW		
180	3C,4C	*	J61-0307-05	WIRE BAND		
183	4B	*	J90-0652-08	GUIDE(RAIL)	M6620	
184	3B	*	J19-3266-08	HOLDER(CORD)	M6620	
185	3B	*	J90-0653-08	RAIL(SUB)	M6620	
186	4A	*	J19-3267-08	BRACKET(GEAR)	M6620	
187	4A	*	D13-0848-08	GEAR(A)	M6620	
188	4A	*	D13-0849-08	GEAR ASSY(B)	M6620	
189	3A	*	D13-0850-08	GEAR(C)	M6620	
190	4A	*	D13-0851-08	GEAR(PULLEY)	M6620	
191	4A	*	D16-0297-08	BELT	M6620	
193	3A	*	J90-0654-08	RAIL(R)	M6620	
194	3A	*	J90-0655-08	RAIL(L)	M6620	
195	3A	*	G11-2007-08	CUSHION(RUBBER)	M6620	
196	3A	*	J31-0838-08	COLLAR	M6620	
197	2A	*	A11-0655-08	SUB CHASSIS(HOLDER BASE)	M6620	
198	3A	*	J19-3268-08	HOLDER(TRAY R)	M6620	
199	3A	*	J19-3269-08	HOLDER(TRAY L)	M6620	
200	2A	*	D10-2390-08	LEVER(TRAY CONTROLLER)	M6620	
201	2B	*	D10-2390-08	LEVER(TRAY CONTROLLER)	M6620	
204	2A	*	J99-0080-08	TRAY	M6620	
205	1A	*	T94-0218-08	SOLENOID	M6620	
206	1A	*	D21-1569-08	SHAFT(SOLENOID)	M6620	
207	1A	*	D23-0251-08	BEARING(SOLENOID)	M6620	
208	4A	*	D15-0304-08	PULLEY(MOTOR)	M6620	
209	3A	*	N09-2748-08	STEPPED SCREW	M6620	
210	4B	*	D10-2391-08	ARM(ROLLER)	M6620	
211	4B	*	D14-0315-08	ROLLER	M6620	
212	2A,3A	*	N84-2006-46	SCREW	M6620	
213	4A	*	N09-2749-08	SEMS SCREW(M2X4)	M6620	
214	3A,4A	*	N19-1230-08	POLY WASHER(2.1X4.0X0.4)	M6620	
DM	2B	*	A11-0653-08	DISC MOTOR ASSY		
FM	3B	*	T42-0553-08	FEED MOTOR		
LM	1B	*	T42-0551-08	LOADING MOTOR		
PH1	3C	*	J25-6382-08	PH SENSOR		
PU	2B	*	T25-0003-05	PICKUP(TOHS,JP1)		
SW1 ,2	3B,2C	*	S40-0050-08	SW1(SLT),SW2(JAM,UN-LOADING)		
SW3	3C	*	S33-1023-08	REST SW		
SW4	1A	*	S46-1130-08	MAGAZINE IN SW		
SW5	4A	*	S46-2020-08	P1 TRAY OPEN-CLOSE SW	M6620	
SW6	2C	*	S40-1151-08	LOADING SW		
TM	4A	*	T42-0551-08	P1 TRAY MOTOR	M6620	
VM	4C	*	T42-0551-08	VERTICAL MOTOR		

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DP-M109/5520/6620

SPECIFICATIONS

DP-M109/M5520

[Format]

Type ..... Compact disc player
Read system ..... Non-contact optical pick-up
Rotational speed ..... About 200 to 500 rpm

[Audio]

Frequency response ..... 4 Hz ~ 20 kHz ±1.0 dB
Signal-to-noise ratio ..... more than 95 dB
Total harmonic distortion ..... 0.01% at 1 kHz
Channel separation ..... more than 85 dB at 1 kHz
Wow & flutter ..... Below measurable limit
Output
LINE ..... 1.2 V/1.1 kΩ
Headphone jack ..... 20 mW (16 Ω)

[General]

Power consumption ..... 15 W
Dimensions ..... W: 440 mm (17-5/16")
H : 128 mm (5")
D : 367 mm (14-7/16")
Weight ..... 6.0 kg (13.2 lb)

DP-M6620

[Format]

Type ..... Compact disc player
Read system ..... Non-contact optical pick-up
Rotational speed ..... About 200 to 500 rpm

[Audio]

Frequency response ..... 4 Hz ~ 20 kHz ±1.0 dB
Signal-to-noise ratio ..... more than 95 dB
Total harmonic distortion ..... 0.008% at 1 kHz
Channel separation ..... more than 85 dB at 1 kHz
Wow & flutter ..... Below measurable limit
Output
LINE ..... 1.2 V/1.1 kΩ
DIGITAL (OPTICAL) ..... −15 dBm ~ −21 dBm
Headphone jack ..... 20 mW (16 Ω)

[General]

Power consumption ..... 15 W
Dimensions ..... W: 440 mm (17-5/16")
H : 128 mm (5")
D : 367 mm (14-7/16")
Weight ..... 6.5 kg (14.3 lb)

Note:
KENWOOD follow a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Accessories

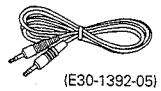
- Audio cord 1

(E30-0505-05)

- Battery ..... 2 ("AA" or "R6")

(–)

- System control cord . 1 (Except for the U.K. and Europe)



(E30-1392-05)

- Magazine ..... 1 (with 6 disc trays)

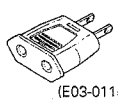
(J19-3050-03)

- Remode control unit . 1
(RC-PM5520)
(RC-PM6620)

(A70-0353-05) : DP-M5520
(A70-0352-05) : DP-M6620

- AC plug adapter 1

For the unit with a Europe-an AC plug in areas other than Europe.
(Except for some areas)



(E03-0115-05)

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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550 Clark Drive, Mount Olive, NJ 07828, U.S.A.
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